### Supercomm swan song

IP services rule last edition of the big telecom show. PAGE 12.

### **HR** and **IT** collaboration

Corporate leaders from both departments share strategies for how they can work together to make their companies more successful. PAGE 75.



### **Red Hat Q&A**

CEO Matthew Szulik on market consolidation, company expansion and singing with a choir. PAGE 26.

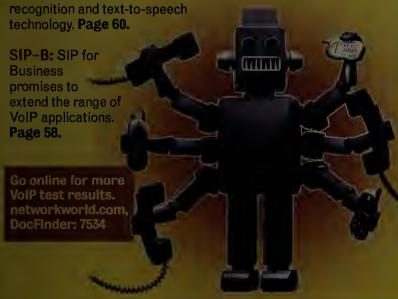
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June 13, 2005 Volume 22, Number 23

### NOLOGY INSIDER

We go inside vendor labs for a look at future features. Page 55.

NETWORK WORLD Clear Choice Test: Unified messaging vendors spice up their offerings with advanced user interfaces and more accurate voice



# **Outsourced security** called battle tested

### BY ELLEN MESSMER

WASHINGTON, D.C. - Outsourcing corporate security is no longer risky business and large organizations should hand off network monitoring and security services as soon as possible.

That was the main conclusion Gartner analysts presented to about 2,000 IT executives at the firm's IT Security Summit last week. Gartner predicts the future of security is in the cloud and expects to see more services such as MCI's WAN Defense ,announced two weeks ago.

"Why should I filter out this garbage at my end? Outsource as much of the day-to-day busywork as you can, as soon as you can," said Gartner analyst John Pescatore in his presentation titled "The Near Future of Network Security."

Pescatore acknowledged this is a radical change from what Gartner would have advocated in years past, when it viewed security outsourcing — which requires a company to entrust an outsider with critical support - as controversial.

"It's just not controversial anymore," Pescatore said. He said the level of expertise exhibited by the

See Security, page 88

### **SECURITY DEADLINE LOOMS**

Anti-fraud requirements pushed by credit card companies set to kick in on June 30. Page 8.

# **Advanced technologies** muddy software licensing

BY JENNIFER MEARS AND ANN BEDNARZ

Software licensing has never been simple, but the issue is becoming particularly thorny as IT managers deploy new data center technologies such as serv-

er virtualization, grid computing and multicore processors that stretch the limits of traditional per-CPU pricing.

GIACOMO MARCHESI

These shifts in data center architecture bring more flexibili-See Licensing, page 14

BC04 **+D0** 

### **Web services** ready to rock mobile apps

BY JOHN COX

The stage has been set for Web services to start playing a vital role in mobile applications for enterprise networks.

Web service development tools are growing more sophisticated as wireless networks become more pervasive and powerful.

This combination will make it easier for enterprise network groups to tie together mobile clients with back-end applications and data.

The potential was illustrated at last week's annual TechEd conference in Orlando, where Microsoft announced the latest pre-beta release of Indigo, the

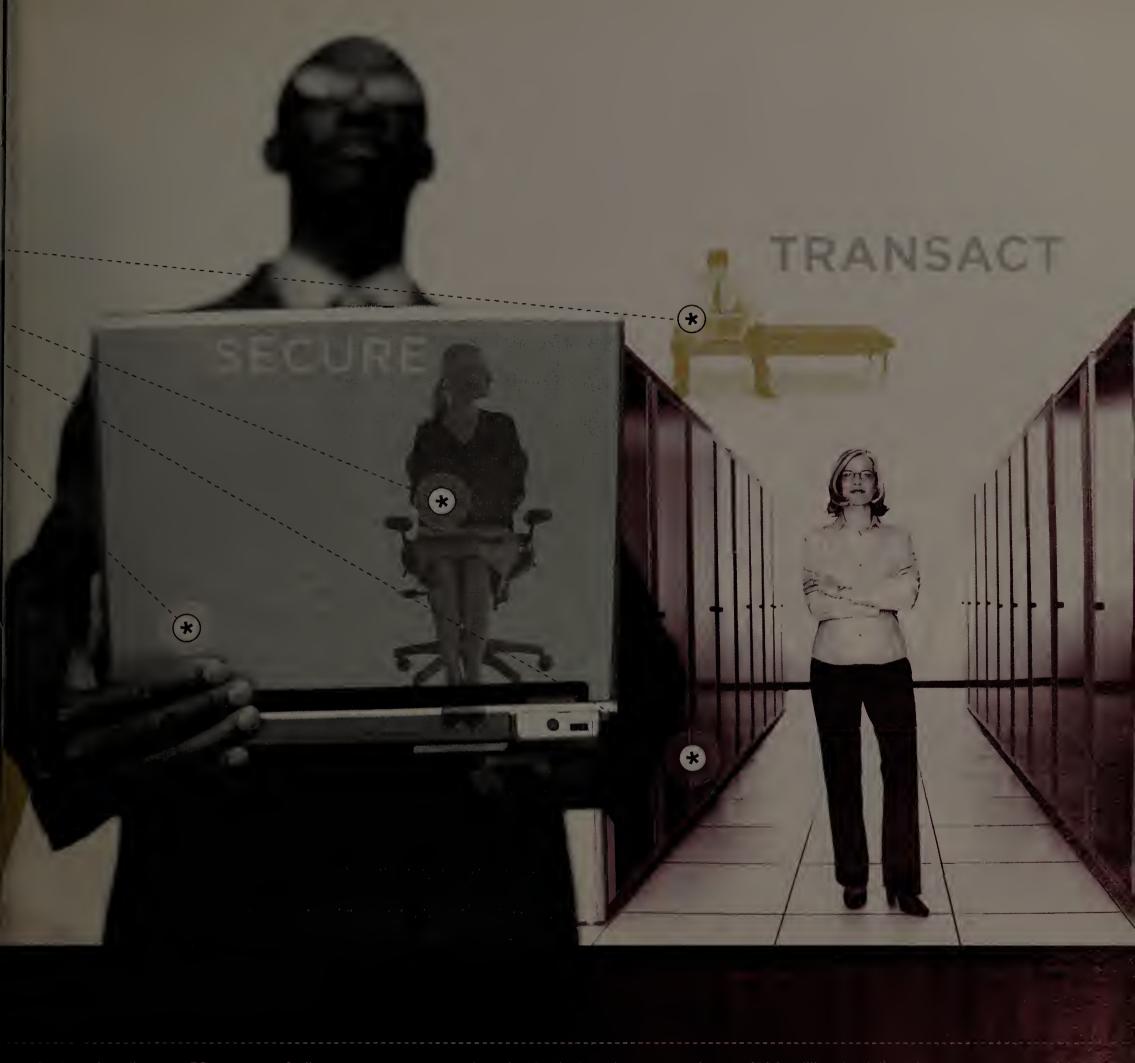
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### Management **Strategies**

75 HR and IT seek common ground: Thought Leadership Summit brings together leaders to share strategies.



What if your phone could learn over time which calls to put through to you and which ones to hold? What if you could set up a bunch of always-on phone connections and talk to key people whenever you want without having to re-dial? These features and others are being developed inside the vendor VoIP labs.

### SIP gets serious:

SIP for Business promises to give VoIP applications the same range of features that PBX customers are accustomed to. Page 58.

### Clear Choice Test: **Unified messaging:**

IP telephone vendors are adding advanced user interfaces and more accurate voice recognition and text-to-speech capabilities. In our test of four unified messaging platforms, Avaya came out on top. Page 60.

Manufacturing Wireless enables assembly lines 802.11 LANs, RFID and sensors give companies a better view into plant processes. Page 68.

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### **Available only on Network World.com**

Tips for stopping spyware from infecting your PC Columnist Winn Schwartau says: "It's not that big a job to keep your PC clear of Spyware. A few simple applications added to your system will greatly reduce or even block most if not all spyware." DocFinder: 7548

Apple makes a switch: What does Apple's announced move of dropping IBM PowerPC chips in favor of Intel processors mean for the company and its enthusiasts? We talk with Tim Deal, senior analyst at Technology Business Research to

find out. Stream it or download it to go. DocFinder: 7549

Everything old is new again: Get strategies and advice for giving your old PCs new life or recycling them. DocFinder: 7550

A Wider Net If you've missed any of our weekly stories that go beyond the speeds and feeds of the network and IT industries — take a look at the nation's elitie science and technology high school or stories of married net pros. Check out the Wider Net archive. DocFinder: 7551

### **Online help and advice**

**Nutter's Help Desk** Wireless connection problems. Help Desk Guru Ron Nutter helps a user who's having trouble with his wireless setup: "It has difficulty accessing about 85% of the sites we try. DocFinder: 7552

Security chief Don't ditch the landline yet. Columnist deb Radcliff says home VoIP is cool, but it needs safety and reliability fixes before you switch, DocFinder: 7554

**HomeLAN Adventures** Cleaning up after a Web session. Columnist Keith Shaw looks at affordable applications that erase sensitive data from your computer. DocFinder: 7553

Small Business Tech New wireless kit and and more USB back-up chatter. Columnist James Gaskin savs US Robotics' new wireless kit is good for consumers and techs. DocFinder: 7555

### **Seminars and events**

Wireless & Mobility: Commanding Broadband Everywhere, Are you ready to explore options in localand wide-area wireless data services, and discover strategies that

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### Intel, Nokia join forces on WiMAX

Intel and Nokia are teaming up to back the development and standardization of mobile WiMAX technology. WiMAX, part of the IEEE's 802.16 standard, is a wide-area wireless networking technology that promises to deliver wireless broadband access over a range significantly greater than that of 802.11 wireless LAN technology commonly known as Wi-Fi. Cooperation between Nokia and Intel will focus on IEEE 802.16e, a version of the technology that will offer broadband Internet access to mobile users. This standard is under development, and Intel and Nokia expect it to be finalized next year. Under terms of the agreement, Nokia and Intel will work together on issues related to the development of mobile WiMAX clients and network infrastructure, and promote the technology.

### **Oracle snaps up TimesTen**

■ Oracle last week announced it has agreed to buy TimesTen, a privately held company that makes software for boosting the performance of database applications used for stock trading, airline reservations and other areas where fast response times are important. TimesTen's infrastructure products are already used frequently by Oracle customers, providing inmemory caching for Oracle's database. TimesTen's customers include JP Morgan Chase & Co., Sprint and United Airlines, Oracle said. Oracle will use the technologies in its database and middleware products, allowing it to improve availability and response times for customer applications, Oracle said. TimesTen's products are also used for managing events, transactions and data for real-time billing and call center systems. Competitors include Ants Software of Burlingame, Calif. The transaction is expected to close by the end of July pending regulatory approval and other customary closing conditions. Financial terms were not disclosed.

### **Microsoft readies 10 security fixes**

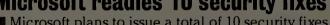
Microsoft plans to issue a total of 10 security fixes,

quote of the week quote of the week quote of the week

"I write it on a computer not connected to the Internet. I wouldn't think of putting it on a computer on the Internet."

Bob Woodward, Washington Post journalist at last week's Gartner conference, discussing precautions he takes when writing about sensitive subjects such as the identification of Deep Throat.

Software Removal Tool. Though the company released few details on the updates, they will include "moderate" updates covering Microsoft Services for Unix, Microsoft Internet Security and Acceleration Server, and Small Business Server. An "important" security update for Exchange is also planned, the company said Microsoft has deemed some of these updates as critical, meaning that the vulnerability could allow malicious code to spread without user action, but some critical vulnerabilities may be far less likely to be exploited than others, said Russ Cooper, senior scientist at Cybertrust and editor of the NTBugtraq discussion list.



including "critical" Windows updates, during its Monthly Security Bulletin release, scheduled for Tuesday. The company also plans to release an updated version of its Microsoft Windows Malicious

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Kenneth Moss cooks up something funny and takes top honors in our Weekly Caption Contest. Head to Layer 8 every week for the start of a new contest and all your not-just-networking news. www.networkworld.com/weblogs/layer8

### **TheGoodTheBadTheUgly**

**Energy to burn.** Researchers at the Mayo Clinic in Rochester, Minn., are studying ways for people to burn off more calories -- at a very slow, unsweaty pace -- while at work reading e-mail and doing other activities, according to an Associated Press report. The research outfit refers to the field as NEAT (DocFinder: 7563), short for non-exercise activity thermogenesis.

The customer comes last. About half of the roughly 147 small North American businesses assessed in a recent survey failed to respond to e-mail inquiries from customers. Of those that

did respond, four out of five replied with inaccurate or incomplete information, according to the study conducted by BenchmarkPortal, a source of customer relationship management best practices information.

< Where's the package? You might think a company that made such a stink about Lindows would be more careful in choosing a name for its own work. Seems as though Microsoft failed to do so, however, before Bill Gates

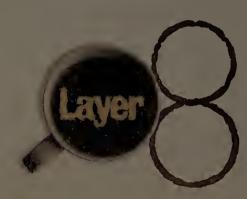
recently announced its EuroScience partnership at an event in Prague. Shortly thereafter the EuroScience Open Forum, 2,100-strong including Nobel laureates, started crying foul. Microsoft has apologized and is working to reach some accommodation.

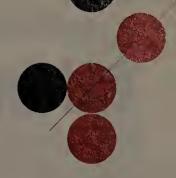
### **CA to acquire Niku**

Computer Associates has agreed to buy Niku, an IT management and governance software company for about \$350 million in cash. CA's relationship with Niku began in January, when it signed a deal to resell, service and support Niku's Clarity IT-MG software. This software helps managers evaluate investments and measure the results of projects, according to CA. Niku President and CEO Joshua Pickus will become a senior vice president of CA's Business Service Optimization (BSO) unit. CA expects most of Niku's other 290 employees to remain with the company, which will be merged into the BSO unit, it says. Clarity will be incorporated into CA's Unicenter product line. CA will pay \$21 per share for Niku, and expects to see returns on its investment in 2007. The deal is expected to close in about three months, subject to the approval of regulators and Niku shareholders.

### **Qwest open to suitors**

Owest is leaving open the possibility that it might be bought by another service provider "We're looking at every opportunity as we look at the consolidation that is going on in our industry," said Qwest CEO Richard Notebaert speaking last week at the Executives' Club of Chicago. "And that's all I'd better say about that." After losing its bid for MCI to Verizon, Qwest is trying to regroup and focus on high-quality customer service, he says. "We were really bummed out about the MCl thing, but then we got over it." Notebaert said the repeated offers and counter offers for MCl was wearing on him and his executives. "It was an experience of heightened frustration. By the time you do it for the fourth time, it's a little sad."





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# Taking on IT service management

Companies labor to standardize processes and technologies across corporate networks.

### BY DENISE DUBIE

DENVER — Despite the growing popularity of best-practice frameworks such as the Information Technology Infrastructure Library, network managers shouldn't underestimate the challenge of adopting service management processes and technologies, according to those knee-deep in ITIL implementation projects.

ITIL and its framework for instituting standard processes across IT departments last week dominated discussions among some 2,000 attendees at the HP Software Forum.

From shipping giant DHL to the Greater Toronto Airports Authority (GTAA) to Toyota Financial Services, large organizations say the benefits of getting their IT houses in order are numerous. But they also warn that IT managers must endure a lot of hard work before they can sit back and enjoy the fruits.

"I worked to get a set of repeatable processes in place that would enable IT staff to respond in a reasonable amount of time," said Gary Long, general manager of IT at GTAA. "It's been four years in the making."

GTAA is not alone. Other examples include: Lucent, whose proiect started more than one vear ago; Toyota Financial Services, which began its efforts nine months ago; DHL, which is at one year and counting; and Choice-Point, a provider of identification and credential verification services in Atlanta, is a year into its second attempt at ITIL. IT managers advise others to plan to commit at least a year to getting ITIL adoption started and to devise creative strategies to keep momentum going for years after.

Long described his efforts to overhaul the GTAA network and streamline processes as a "work in progress," and plans to use the IT service management framework he now has in place to add applications, expand services and adopt technologies such as RFID and wireless. The benefits aren't always easy to see at first, he said.

"It's going to continue to be a challenge to add head count, so the more efficiencies I can build into our processes, the better chances I have containing costs going forward," he said.

More North American companies are warming to the idea of IT frameworks — a recent Forrester Research survey of 135 IT managers found that about 20% use ITIL and another 20% rely on the tenets of the Control Objectives for Information and Related Technology, a framework that also provide guidelines for IT process and governance. Yet industry experts say plans to adopt best practices often hit roadblocks. In a recent report, Malcolm Fry, one of the original contributors to ITIL, details why IT framework implementation attempts often fail.

Among the top 10 reasons Fry says ITIL rollouts flounder are lack of management commitment, loss of momentum, poor organization and performance-based measurement standards.

"Most IT monitoring activities concentrate on performance, while ignoring quality and processes," Fry writes in the report. "For example, most service desks can report how quickly they escalate incidents, but few can report how often they escalate incidents to the wrong person."

For instance, DHL started in May

### Service management savvy

Experts share process adoption tips.

- 1. Publish processes: IT managers document the new workflows and tools to be used. but they don't always know to make the processes available to those who need them on a day-to-day basis. DHL created detailed online versions of its Global Service Desk's working procedures that can be downloaded by staff around the world.
- 2. Training: Asking IT staff to change how they do their job and the tools with which they do it requires a lot of training in terms of new products and technology. Staff will also have to be trained on workflow, escalation and reporting practices.
- 3. End-to-end participation: Best practices frameworks aren't designed for departmental use. If adopting ITIL or another IT governance framework, companies need to ensure the IT processes adopted are embraced in every aspect of the organization, such as application development, support staff and operations.
- 4. More than ITIL: There are several IT best practice frameworks that can help !T staff get started at streamlining operations and building better processes. Control Objectives for Information and related Technology (COBIT), Six Sigma and the Capability Maturity Model (CMM) can be used on their own or in concert with ITII..
- 5. Maintain momentum: Moving from ad hoc IT management to a standard methodology is a long-term and ongoing commitment. One Greater Toronto Airports Authority IT executive has dedicated the last four years to overhauling the network and bringing ITIL-based service management principles to his department.

2003 to migrate numerous systems and disparate IT teams to one standardized ITIL-based service management methodology. For the shipping company, the move to ITIL didn't so much lessen the number of calls to its service desk — the company still averages about 100,000 per month — but now all the calls are routed through one system, addressed using the same processes, and data regarding the calls is stored in one place.

"Our call volume may still be high, and it may continue to be while we are acquiring a lot of companies, but our number of incidents [requiring immediate attention] has been reduced,"said Dennis Deane, a program manager within DHL's infrastructure services organization.

The move to ITIL was driven by DHL's need to establish a Global Service Desk that would provide one virtual point of contact for support calls. DHL required 4,000 IT staff members to abandon how they did their jobs, learn new software and follow ITIL-based processes, which are now documented in Web-based downloads. Support staff now relies upon one instance of HP OpenView Service Desk software in use across three regional service desks in Phoenix. See Credit card, 84 / Frague and Cyberjaya, Malaysia.

"The Global Service Desk is a central point of data and control, and it is a good starting point and a basis for continuing improvements." Deane said. "If data is not shared and properly analyzed, then it is worthless."

For ChoicePoint's Krissi Rouquie, ITIL adoption came easier the second time around. The director of enterprise applications said that despite orders from the CIO to get the best practices in place the IT team had a "difficult time defining services and detailing exactly what we were trying to deliver." The first attempt, which started in March 2003 and stagnated between May and December of that year, provided lessons for ChoicePoint's second and successful move to ITIL.

The difference, according to Rouquie, didn't have to do with technology She says communication, management buy-in and training as critical to her company's success. And she clarified that the 1,550 IT employees at ChoicePoint aren't done yet.

'We are still working to provide better metrics and establish a way to track how resources and staff time are actually consumed," she said. "We need to hire a full-time service manager. We're just getting started."

# Online businesses face credit card security deadline

### **BY ANN BEDNARZ**

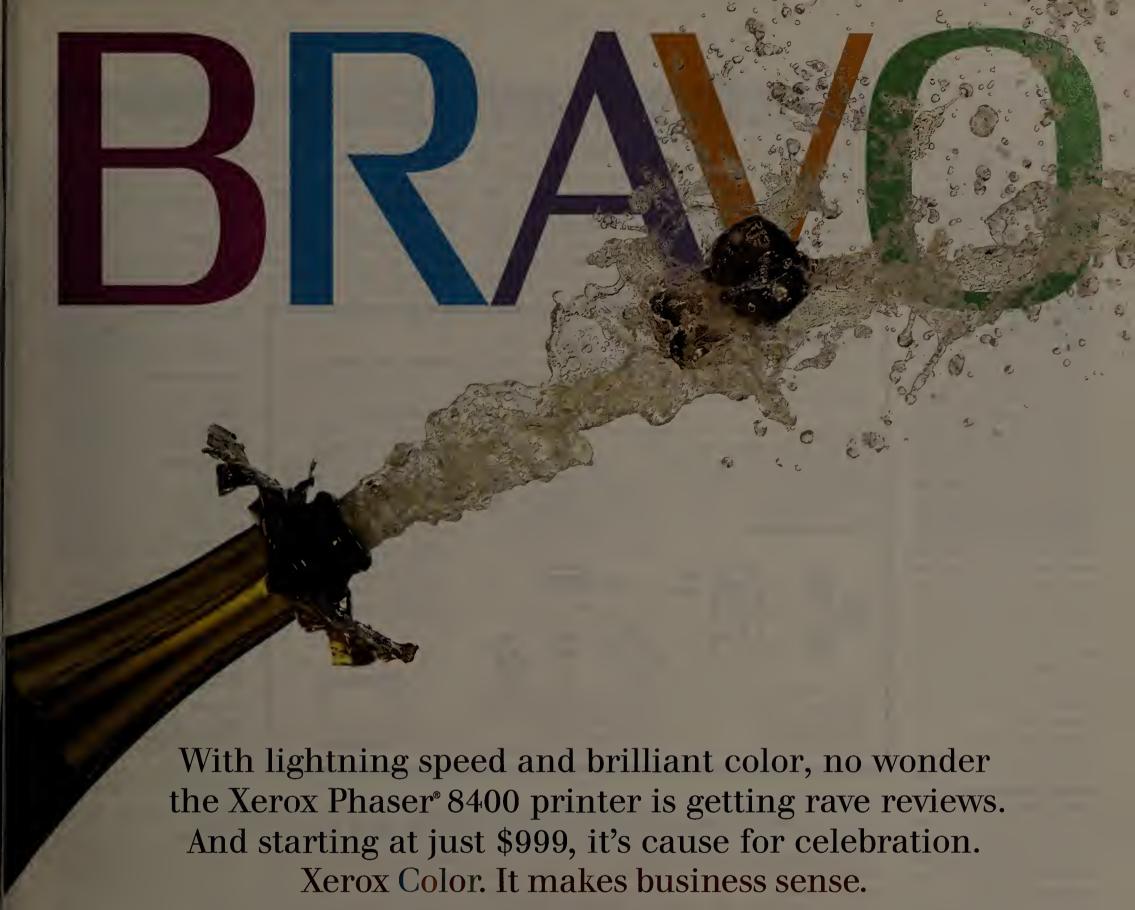
The deadline is fast approaching for companies that conduct business online to have to comply with a common set of security requirements outlined last year by major credit card com-

In an effort to combat fraud, identity theft and other security issues, American Express, Discover, MasterCard, Visa and others created the Payment Card Industry (PCI) data security standard. PCl, which goes into effect June 30, consists of 12 technology requirements (see graphic, page 84) for securing networks and applications, protecting cardholder data, maintaining a vulnerability management program, and regularly validating compliance via a third-party assessment.

For e-commerce merchants, including retailers, payment processors and financial institutions, the standard could make life easier by consolidating what in the past have been a bunch of different security guidelines from credit card companies. However some merchants are ill-prepared to meet the compliance deadline, experts say.

The PCl rules apply to retailers, payment processors and financial institutions — essentially any business that stores, processes or transmits cardholder data. The card associations have laid out varying enforcement policies and penalties for non-compliance, depending on the volume of transactions a merchant or service provider processes. The largest players could face up to \$500,000 in fines per incident if cardholder data is compromised and the merchant or service provider is not PCI-compliant. In addition, the card associations can cut off non-complying companies' credit card processing

The June 30 deadline came as something of a surprise for Jelly Belly Candy Company, admits Gary Praegitzer, network administrator and security specialist at the Fairfield, Calif., candy maker. But the company is in good shape to comply. Over the last few months it has used security scanning services from Qualys



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### SOA

continued from page 1

next Windows communications framework for Web services. During a session devoted to Indigo, Microsoft's Ari Bixhorn, lead product manager for Web services, created a device-based chat application with Indigo in about 5 minutes. In another demonstration, an Indigo-based application, working with Microsoft's Media Center software, sent an alert to Bixhorn's PocketPC smartphone whenever his son turned the TV set to "The Jerry Springer Show."

Some pioneers aren't waiting for Indigo (the beta release is due this summer) to launch mobile applications that use Web services. But it means building from scratch many of the services Indigo will provide as callable class libraries. such as reliable messaging, transaction features and security

"You can do [a service-oriented architecture] without Indigo. And we did," says Furrukh Khan, associate professor at Ohio State University's college of engineering in Columbus. He led a team in creating a Web services architecture (see graphic), using Microsoft's earlier Web Services Enhancements (WSE) 2.0 software, for operating rooms at the OSU Medical Center.

He wouldn't do it again.

"You have a federation of Web services, that need security, reliable messaging, transactions and a lot of things besides simple HTTP," he says. "Almost all this was missing from WSE 2.0, which focused mainly on security. Indigo combines all this functionality into one unified model for SOA."

Khan's team is at work now replacing large chunks of custom written code with Indigo's class libraries.

As handheld devices gain still more powerful processors and more memory, and as wireless data nets offer greater throughput and reliability, Web services become increasingly attractive for enterprise users.

"We've not seen a lot of Web services in the field because of the cost and difficulty of getting persistent [cellular data] connections," says Douglas Giuliana, director of product development Eleven Technology, a Cambridge, Mass., software company specializing in mobile applications for the consumer packaged goods industry. "But we're

seeing interest growing as the cost of [General Packet Radio Service] offerings drop. Our customers have been talking with us about

"In the handheld device space. Web services enable customers to easily access pertinent information from wherever they are." Microsoft's Bixhorn says."A delivery guy with a PocketPC application on a handheld 'calls' our vital signs data from a proprietary network of monitoring equipment, store it and allow mobile and desktop clients to access it through a client application (written in Macromedia's interactive Flash FX2004) that calls the Web service directly instead of going through an applications server or other middleware. The vital signs are displayed graphically in the Flash player and in numerical

example, the Web service will pop up the relevant forms to track each stage and each action.

This kind of virtuous circle of Web services interactions is one of its defining features and one of its strongest attractions. "The beauty of it is, once you've built a Web service, you have multiple applications that could use it," says Jim Hilt, manager of SOA at IBM Global Services in Armonk, N.Y.

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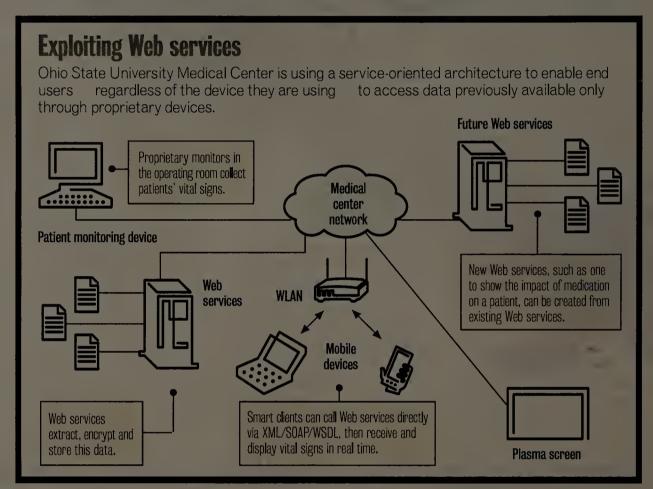
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MapPoint public Web service and gets directions to his next location."

With Web services, mobile devices no longer become a special integration problem.

"If I build a Web service on the backend, I don't have to build two versions of it, one for 'normal' clients and one for mobile clients," says James White, author of Java2 Micro Edition, Java in Small Things. Formerly with discount retailer Target, he's now an instructor for Intertech Training in Eagan, Minn.

"We were constantly going to the server guys and saying, 'How can we get these little clients to work with the servers?' Web services let the server guys implement business functions as they see fit. Then, the clients can deal with those functions as they see fit," he says.

That kind of simplicity can be seen at OSU Medical Center. The focus of the first Web services system, OR-Eye, was to pull patients'

form. The mobile clients now can access the data from anywhere on the wireless LAN throughout the

Khan's team is exploiting this service with two new services, in various stages of deployment. OR-Med will let an anesthesiologist in the operating room use a client application to enter a drug name and intended dose for a given patient. A group of Web services will check for drug interactions, patient allergies and potential complications, then report the results back to the client. After the drug is administered, OR-Med can tap into the vital signs Web service and track a timeline of when the drug was given and the patient's reactions.

OR-Track will use radio frequency identification tags on a patient's wrist, and RFID readers connected to the hospital network to track patients. When a patient moves to a different location, from operating room to recovery, for

A trucking company might pull GPS data via a Web service from its cellular data carrier to feed location information to drivers. But the company's route planners and warehouse operators might use the same data, accessed easily via Web services protocols, in their own applications, he says.

Khan acknowledges that Web services can be very "chatty," taking up time and bandwidth, both of which are critical over wireless connections.

"It's really a matter of design," he See SOA, page 88

## What happened at Microsoft's **TechEd**

Read more online about wMicrosoft's identity management strat-

egy. DocFinder: 7562 The company's policy-based security

plan. DocFinder: 7561.

# **Ex-Cisco executives flee Nortel**

Departure of President Gary Daichendt and CTO Gary Kunis could hurt company's recovery efforts.

### **BY JIM DUFFY**

Nortel's enterprise network ambitions suffered a setback last week as two top officials both former Cisco executives departed after just three months on the job.

President and COO Gary Daichendt, formerly executive vice president of worldwide operations at Cisco, resigned due to management differences with Nortel CEO Bill Owens. CTO Gary Kunis, who had been Cisco's chief science officer and worked alongside Daichendt at Cisco, followed his colleague out the door.

"It has become apparent to Gary and me . . . that we have divergent management styles and our business views differ,"

Owens said in a statement. "1 respect him for his decision and l wish him every success in his future endeavors."

Owens, during an interview earlier in the week with Network World, never indicated any such problems were afoot when questioned about the recent hir-

The hirings of Daichendt and Kunis were considered coups in light of Nortel's strategy over the past year to give enterprise networking more prominence within the organization. The company has been relying increasingly on its enterprise network operations to drive revenue growth and help put behind it an accounting scandal that forced the restatement of years of

But Nortel has lots of work to do in the enterprise market. A distant No. 2 to Cisco in the Layers 2, 3 and 4-7 switched Ethernet market, Nortel lost a full percentage point of revenue share in 2004 and even more share between the fourth quarter of 2004 and the first quarter of 2005, according to Dell'Oro Group.

Owens will now take back the reins he handed to Daichendt when he hired him. But analysts say Owens best not hold them too long or too tight.

"It's a blow to their enterprise play," says Zeus Kerravala of The Yankee Group. "In a sense they're starting back at square one. The fact that it happened

this quickly makes you wonder about the culture there.

"He's got to hire two more executives. He's got to bring in some tactical people, Kerravala says. "He can build and set the vision for the company but he's got to have some guys in there that make the day-to-day operations run."

Nikos Theodosopoulos of UBS Warburg asked: "Why were these guys hired in the first place?

"It's definitely a setback," he says. "The company just made an acquisition [of government integrator PEC Solutions] and you've got to deal now with integration of that. And now you have no COO. It puts some strain on the integration process of

### One on one with Owens

We spoke with Nortel CEO Bill Owens at Supercomm last week (before the



executive resignations). Read what he had to say about:

- Cleaning up the company's finances.
- Attacking the enterprise and carrier network markets.
- Cisco's vulnerabilities.

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# Supercomm touts convergence

### Broadband and integrated IP services dominate the show

### BY TIM GREENE AND JIM DUFFY

CHICAGO — Supercomm convened for the final time last week and telecom's premiere U.S. trade show went out with a bang, drawing an impressive roster of executive speakers and throngs of service providers eager to upgrade their - networks to support advanced IP services.

This despite the fact that the two groups that sponsored the show for the past five years - the Telecommunications Industry Association and the U.S. Telecom Association — are going their separate ways next year to start their own shows, GlobalComm and TelecomNEXT, respectively.

Over its 18 years, Supercomm managed to ride out the most devastating downturn in telecommunications history and then rebound over the past three years. Last week's event boasted a Who's Who of speakers from Cisco's John Chambers to new FCC Chairman Kevin Martin. The CEOs of Nortel, Lucent and Siemens even shared an hour on the same stage at the McCormick Place convention center.

One consensus that emerged from the din of the show was that broadband is king, the single most important factor in making converged IP service offerings a reality.

On the policy side, the FCC's Martin said he supports the Bush administration's goal of universal broadband access by 2007."lt can mean a productivity growth for a country of people who are all connected," he said.

But the political talk about broadband lacks substance, said Nortel president and CEO Bill Owens. "I don't see policies or direction that will take us forward," he said.

The U.S. lacks a plan for getting consumers to embrace broadband access to the Internet and booth to booth, vendors and carriers announced new hardware. software and services that promise to alter the way businesses view communication.

Alcatel announced it would be pushing passive optical networking technology to gigabit speeds through an alliance with chip maker Freescale, while a dozen other PON vendors teamed up to demonstrate that their technology

Even traditional copper phone lines are being mined by vendors that can turn the old infrastructure into high-bandwidth Ethernet circuits. Aktino, for instance, chose the show as a platform to announce its AK4000 device that logically bonds copper wires to support 25M bit/sec Ethernet services. The Metro Ethernet Forum put up a booth where members demonstrated interoperable gear

The network will support blended voice, data and video applications, he said To that end, Microsoft announced a series of alliances with telecom vendors with the goal of integrating its software

Fios, a network capable of

100M bit/sec transmission, is

passing 35,000 homes per week

and will cover 3 million by the

end of the year, Seidenberg said.

with service-provider platforms. Microsoft is working with Nortel and Sylantro, for example, to develop interoperability between its applications and their software.

Nortel will integrate its collaboration/messaging offerings with Microsoft Outlook to support multimedia communications services such as unified voicemail, e-mail and video messaging.

Similarly, Microsoft will enable its applications to work with Sylantro's VolP technology to create richer collaboration services that carriers can sell. The plan includes tying Microsoft's Office Communicator, due out this fall, with Sylantro's VolP service software to create a service in which Communicator will display whether the customer is available by phone, instant messaging, email or other means.

Microsoft even announced a five-year agreement with AT&T to develop messaging, collaboration and business applications for corporations that meld Microsoft applications with AT&T's IP/MFLS network. Long term, the partnership is designed to result in hosted application services. It will also include integration of Microsoft applications with AT&T service software to enable click-to-dial capabilities.



There will be broadband to every American by the end of this decade."

John Chambers, CEO, Cisco

other services, he said, and pointed to South Korea, the nation most receptive to broadband technology, as a better example. He credited that country's wide acceptance of broadband with contributing to an informed, competitive workforce that fuels businesses like Hyundai and Kia.

Whatever the political shortcomings, technology at the show took leaps and bounds. As more than 30,000 people elbowed from

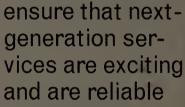


The FCC needs to decide what rules apply to IP services and needs to decide pretty quickly. "

Kevin Martin, chairman, FCC

is interoperable.

The most promising broadband wireless technology, WiMax, is still nearing standardization, yet prestandard WiMax gear riddled the show floor. Israeli WiMax vendor Alvarion announced BreezeMAX WiMax products that are designed to deliver connectivity up to 70M bit/sec. The products operate in radio spectrum set aside for U.S. carriers.



We need to

and secure.

Pat Russo, CEO, Lucent

supporting VolP, circuit emulation, video conferencing and 3D video transmission.

Service providers also jumped in with high-speed news. Verizon is steaming ahead with broadband, according to CEO Ivan Seidenberg, whose keynote kicked off the conference. The carrier has invested \$73 billion in its network since 2000, driven in large part by its fiber-based broadband deployment called Fios.

# Dearth of standard stalls Ethernet services

### BY JIM DUFFY AND TIM GREENE

CHICAGO — The lack of a standard Ethernet interface between different carrier networks is impeding carrier plans to extend virtual private LAN services on a national and global scale.

Carriers at last week's Supercomm 2005 conference here say they require a standard network-to-network interface (NNI)

between their own and other carrier networks to offer consistent multipoint Ethernet services for customers with operations across the country or the world. They say such a virtual private LAN service (VPLS) NNI would let them offer consistent service quality and more reliable service-level agreement (SLA) guarantees for meshed intercarrier Ethernet connectivity extending beyond the metro-

politan-area boundary.

"We want to be able to map services" across carrier boundaries, says Michael Rouleau, senior vice president of business development and strategy at Time Warner Telecom. "The last thing we want is lowest common denominator" service.

"VPLS will be very important for maintaining QoS through a multivendor infrastructure," says Craig Drinkhall, senior vice

president of product development and engineering at TelCove, a competitive local exchange carrier in Pittsburgh. "But not all of the standards are put together to create vendor interoperability."

However, others argue that even with a standard NNI, carriers will have to enter into lengthy negotiations and testing with specific peers to extend SLA guarantees

See Intercarrier, page 84

# Two cases of lost data shine light on risks

BY CARA GARRETSON

A pair of recent security breaches — one involving lost back-up tapes containing financial information, the other in which countless postings were deleted from thousands of online bulletin boards — shows that data loss can happen in many different ways for just about any reason.

Financial powerhouse Citigroup last week began sending letters to customers warning them of potential identity theft after UPS lost a package containing back-up tapes with financial information about 3.9 million people. The unencrypted tapes, en route to a credit bureau, contained names, Social Security numbers and payment history information.

UPS officials say they're not sure how the package went

missing, and the company is trying to determine what went wrong so it can fix the problem.

"Back-up tapes are the Holy Grail. If you get the back-up tape of any one [company], you own them, you've completely blown all their security," says Jim Stickley, CTO and co-founder of TraceSecurity, a security software maker that performs audits for financial institutions. Had Citigroup's tapes been encrypted, the loss would have been much less grave, he says.

Citigroup next month will begin sending information to credit bureaus via encrypted electronic communication, officials said.

On Memorial Day, bulletin board hosting service Ezboard suffered a hacker attack that permanently erased postings from many of the hundreds of thousands of communities the company hosts. Unlike a typical attack that aims to bring down a service for boasting rights or to steal sensitive information to be used in identity theft, the goal of the Ezboard breach appears to have solely been to erase historical postings stored on the company's servers.

"Someone decided to erase data from our users' boards and, unfortunately, really hurt a lot of innocent people," says Robert Labatt, CEO of Ezboard, which hosts a wide variety of sites, including common-interest and support groups."l have received e-mails from mothers, cancer patients, people upset with the impact this is having on their lives. With the loss of the posts, a lot of emotions went

One bulletin board hosted by

Ezboard, a support group for women undergoing hysterectomies, lost half of its 900 members from the attack, says Becky Gloeckle, the board's administrator in Ohio.

Those members had their threads erased, and many have had to go through the joining process again to get back into the board, she says.

"We were told the bulletin boards would be backed up," Gloeckle says, explaining that Ezboard offers free hosting services for boards that aren't backed up, while administrators pay a fee to run a board that is backed up. "It's not like I can go into a control panel and hit some button to save the threads to a hard drive."

Ezboard has some ideas about who might be behind the attack, Labatt says, and is pursuing all

possibilities with the help of the FBI. The company is offering a \$5,000 reward to anyone with information that leads to the direct arrest and conviction of the hacker.

The company isn't ruling out the possibility of the hacker being an insider.

"There's a big difference between script kiddies and malicious intent. It's more likely whoever came in here was not a script kiddie," Labatt says.

As part of its hosting service, Ezboard uses more than 200 servers that store production and back-up data, and would not specify how many of them had postings erased in the attack.

Labatt won't say what security measures the company had in

"Things you would imagine an See Data loss, page 86

and then it hits you://

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### Licensing

continued from page 1

ty and efficiency to hardware platforms, but they also are likely to result in higher costs — as much as double the cost, in some cases — for software that is priced on a per-CPU basis, analysts say.

That is causing many users to take a cautious attitude when deploying the new technologies. Eric Kuzmack, IT architect at newspaper conglomerate Gannett in Silver Spring, Md., says he is waiting to see how software vendors decide to handle licensing issues.

"A lot of it really comes down to whether vendors are looking at dual core as a way to increase their revenues at our expense, or as a way for us to be able to better utilize their software," he says.

That's what makes the dualcore pricing a sticky issue. It's not clear what kind of performance improvement users will see from dual-core vs. single-core systems.

"The problem is, dual core will not necessarily make applications twice as fast. From what we've been reading and hearing, it's nowhere close to a doubling," Kuzmack says. "Depending on what the application is, if the application isn't written to take advantage of multiple processors to begin with — or if it isn't written very well — then adding more cores won't give you the bang for the buck that the vendors would like to think it would."

Combine the industry's move to

nario is being replaced by more flexible environments where software is no longer tied to hardware and CPU usage rises and falls according to demands. As a result, grid or virtualized environments might require end users to pay for the total number of CPUs potentially available to an application, while only a fraction of those CPUs are used most of the time.

The stakes are high. Companies that license by CPU but don't press software vendors for policy changes as they adopt the new technologies could see software costs increase by 50% or more by year-end, Gartner predicts.

W. L. Gore & Associates, best known for its Gore-tex fabric, first faced the software licensing issue last year when it began updating its Sun hardware to servers based on new dual-core UltraSparc IV chips. The Newark, Del., company learned Oracle considered each dual-core processor to be two CPUs for licensing purposes. That doubled the costs Gore expected to pay for licensing, amounting to about \$100,000 per server.

"To comply with licensing, we decided to re-architect our Oracle solution into a one-box [environment], instead of running the different parts on separate servers," says Richard Sun, network systems engineer at Gore. "It's hard to say whether we made the right decision, but it has caused us to look at other competitors for solutions instead of building up our Oracle presence."

### **Licensing limbo**

Multicore systems, virtualization and grid computing are emerging as key parts of a dynamic data center, but with newfound flexibility comes new challenges. Things to consider:

### Challenges

The industry is standardizing on multicore processors, but the ISV community has yet to agree on how to license for them.

Virtualization lets users run multiple virtual servers on one machine, but most ISVs require a separate license for each virtual instance.

Grid computing lets users pool resources and shift processing demands as needed, but with per-CPU pricing, users might be paying for more licenses than they need.

### **Strategies**

Look carefully at how ISVs define a CPU for per-CPU pricing.

Review virtualization options; some approaches virtualize above the operating system, for example, requiring only one operating system license to support multiple virtual application environments.

Negotiate or use open source software. Most ISVs seem willing to work out arrangements. If not, check out what's available from the open source community and make licensing irrelevant.

make this more fair and equitable," says Amy Konary, program director of software pricing, licensing and delivery at IDC.

Vendors might not yet be ready to make sweeping changes, "but they may be in a position to make special arrangements for customers who want to be early adopters of these technologies.

Gore's Sun agrees: "We're always looking to get the most out of our dollar, so we try to get the most flexible solutions. And when vendors are hungry for business, we ask for concessions on what we are allowed to install in production, to the point of negotiating

lenges of usage-based licensing and multiple workloads that are just beginning to crop up with respect to newer data center architectures, he says.

"We have a pricing model for mainframe systems that has been in place for a long time so it can easily be incorporated into this new trend," Mowen says. "I understand it is all a game and in most cases all negotiable anyway."

Even as the move toward multicore platforms accelerates — Gartner predicts that manufacturing of single-core chips will end as early as next year — there is no consensus on how to charge for software running on systems that include more than one core on one piece of silicon. Oracle, for example, last April amended its contract language to clarify that "a multi-core chip with 'n' processors shall be counted as 'n' processors" for licensing purposes.

Since then, Microsoft has said that it would charge per socket, the physical location of the processor, which could have any number of cores. IBM, meanwhile, illustrated the evolving nature of the multicore discussion when it announced, shortly after the launch of the dual-core Opteron, that it would consider dual-core x86 processors as single processors for licensing purposes. It charges per core for its dual-core Power platform.

At the same time, Oracle stresses that it wants to be flexible.

"Licensing our database by processor is only one of several choices we provide to our customers; other options include licensing per user and per employee," says Jacqueline Woods, vice president of global pricing and licensing strategy at Oracle. "Oracle also offers the option of licensing its software on a term or perpetual basis [one, two-, three-, four- and five-year]."

BEA Systems also offers per user or per-usage pricing, but its standard license is based on CPUs. However, unlike the other ISVs, BEA adds a 25% premium for software running on dual-core machines, an approach more in line with the way systems vendors price their hardware.

"We believe our dual-core pricing adequately reflects the increase in performance you get from the second core," says Bill Roth, vice president of product marketing at BEA.

The issue is even less evolved when it comes to virtualization and grid computing. While these technologies are just starting to move into mainstream data center deployments, the adoption rate, especially for server virtualization, is exploding, making it more important than ever for ISVs to come to a consensus on how they will charge for software in these environments. The virtual machine market, which includes vendors such as VMware and Microsoft, grew 60% between 2003 and 2004 to more than \$330 million, according to IDC. It's expected to reach more than \$470 million by 2008.

"Discussions are starting to bubble up from the end-user community," says Steve McDowell, marketing manager for virtualization solutions at AMD. "They recognize the dilemma. They recognize that maybe they're being cheated and they're paying full price for software that's not fully exploiting the machine because it's being shared in a virtual environment. Stage One is recognizing there is a problem and expecting a solution from the industry."

### **Dueling core policies**

As chip makers introduce processors that combine two cores on one chip, software makers are taking mixed approaches to licensing system software.

| Software maker | Price   |  |
|----------------|---|--|
| BEA Systems    | Charges by the processor, with a 25% premium for software running on dual-core processors.  |  |
| IBM            | Charges single-processor prices for software running on first-generation x86 dual-core systems, but charges two-processor prices for software running on its Power5 dual-core architecture. |  |
| Microsoft      | Charges by the processor, regardless of number of cores.  |  |
| Oracle         | Requires one license for each core on the processor.  |  |

multicore processors with another trend toward server virtualization and grid computing, and IT managers could be facing huge software-license bills, analysts say.

"With technologies such as multicore, virtualization, grid and ondemand, the per-CPU model is falling over," says William Fellows, analyst at The 451 Group.

The issue is that the traditional one application/one server sce-

Indeed, analysts say licensing is becoming competitive for vendors as they sort out the best way to charge for their software, a situation that should be good news for end users.

"Go to your vendor first and figure out what it would cost. Tell them, "This is what we're thinking of doing. What kind of impact would this have on our software license costs? What can we do to reduced costs for licenses that are for testing and development," he

Randy Mowen, director of data management and e-business architecture at transportation and logistics provider The Bekins Company, in Hillside, Ill., says software vendors could take a lesson from pricing on the mainframe.

The mainframe world has spent decades ironing out the chal-

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# Apple swaps IBM for Intel processors

### **BY DENI CONNOR**

Apple's announcement last week that it plans to switch from using IBM processors in its machines to those from Intel may be a bold move, but to some observers the company isn't doing enough.

They want to see Apple make its operating system available on Intel machines from any maker, not just Apple, which is the current plan.

"Long term, Mac OS X should run on any Intel-based hardware," says David Bratt, manager of network systems for the H. Lee Moffitt Cancer Center in Tampa, Fla. "This would be a good strategy to gain market share over Windows and drive the price down for Mac hardware."

Mike Maday, senior LAN Manager at Vanderbilt University Medical Center in Nashville, Tenn., says the organization's network includes plenty of Apple Xserve systems. But he also says that Apple computers cost too much today to warrant putting them everywhere.

"I want to be able to run Mac OS X on Dell, HP and servers we already own and on newer PCs," Maday says. "We'll gladly buy the software from Apple, but not so gladly if we have to purchase their hardware along with it."

A Power Mac G5 operating at 1.8 GHz starts at \$1,500 compared with a Dell Dimension 3000 running at 2.8 GHz for \$450.

Nevertheless, Apple seems firm on its plan.

"We will not allow running Mac OS X on anything other than an Apple Mac," says Phil Schiller, senior vice president at Apple.

### Room to grow

Apple has just

2.3%
of the worldwide desktop computer market, according to IDC.

"That doesn't preclude someone from running [Windows] on a Mac. They probably will."

Apple says it has been developing Macs on both PowerPC and Intel in its labs for the past five years, and has tweaked its operating system so it will run on only Intel-based hardware from Apple. Macintosh computers using Intel processors are scheduled to start rolling off the assembly line by this time next year, Apple says.

The move is being made

because Intel has "the strongest processor road map by far," says Apple CEO Steve Jobs, who says he's disappointed that IBM hasn't been able to deliver a low-power or 3-GHz G-5 PowerPC processor.

"As we look ahead, although we've got some great products now, we can envision some amazing products we want to build. And we don't know how we can build them with the future PowerPC road map," Jobs says.

Analysts and users say the move is risky in the short term, but could pay off in the long run.

"It presumably puts Apple on a better and more reliable chip road map — especially for mobile devices," says Gordon Haff, senior analyst for Illuminata.

Making processors for Apple never amounted to more than 2% of IBM's PowerPC business. At that

level, observers say, IBM is justified in not succumbing to Apple's needs for faster, more energy-efficient processors. Intel, on the other hand, has been shipping low-power Centrino processors for laptops since 2003.

Making the transition from IBM to Intel won't be without its obstacles.

For example, independent software vendors will have to adapt applications written to run on PowerPC-based Macs to run on Intel chips.

Apple plans to include technology in its Intel-based computers called Rosetta, which is designed to let binary code created for PowerPC run on Intel's chips.

Tom Krazit and Nancy Weil, correspondents with the IDG News Service, contributed to this story.

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# ETINFRASTRUCTURE

SECURITY SWITCHING MIROUTING WYPNS MIBANDWIDTH MANAGEMENT

### Short Takes

- Symbol last week unveiled the first radio-frequency identification reader that runs Windows CE 4.2 and code related to a draft Microsoft RFID specification. As a WinCE device, the XR400 reader can directly host custom and third-party applications written for that operating system. The RFID code conforms to Microsoft's draft Device Service Provider Interface, which is part of the company's emerging .Net Framework-based RFID infrastructure. The reader incorporates an Intel Xscale IXP processor, with 64M bytes of flash memory and 64M bytes of dynamic RAM, for the operating system and applications. It has a 10/100 interface, RS-232 port, USB port and general purpose programmable I/O port. The XR400 costs \$2,500 to \$3,000.
- Netgear last week said it will introduce its first wireless LAN switch. aimed at small and midsize businesses. The switch is designed to centralize wireless network management for security and configuration, and offer administrators a graphical interface for such tasks. The switch, like Netgear's line of ProSafe access points, will incorporate radio frequency configuration and management software from Autocell Laboratories (formerly Propagate Networks). The software can adjust radio power settings, make or change channel assignments and balance wireless traffic among nearby access points. Netgear didn't say when the switch would ship or how much it would cost.
- **Secure Computing** has announced Sidewinder G2 Security Reporter to centralize logs and provide real-time reporting for multiple Sidewinder firewalls. The Sidewinder G2 Security Reporter, which runs on a Windows-based server, is an alternative to Secure Computing's individual firewall reporting. The Sidewinder G2 Security Reporter, which costs between \$695 and \$1,295 per firewall depending on volume, is expected to ship June 20.

# Multi-function boxes take off

### Individual job-specific security devices have fans, but days might be numbered.

### BY TIM GREENE

As the number of security technologies grows — firewall, anti-virus, content filtering, intrusion detection and others some vendors suggest it makes sense to load all these platforms on a single device to save capital and operational costs, and perhaps even to improve security.

The flip side is that these boxes might represent a single point of failure in the network and that the individual security functions might not represent the best in their category.

Nevertheless, more vendors are offering products in this category, with recent additions ranging from network leader Cisco to start-up NetworkD. Other vendors include

### Security bundled or a la carte?

Multi-function security platforms combine firewalls, VPN, anti-virus, intrusionprotection and other applications, but some users prefer to buy stand-alone products instead. There are trade-offs.

| Pros   | Cons  |
|--|---|
| Simplifies administration of security.                           | Single point of failure.  |
| Requires fewer company resources to support.                     | Not best of breed for all applications.                                     |
| Deal with a single vendor.                                       | More complex therefore more potential security flaws.                       |
| Broad range of security for less than individual platforms cost. | Might lack processing power to keep all applications running at wire speed. |

Crossbeam, Fortinet, Juniper, Sonic Wall, Symantec, Secure Computing and Serv-Gate. A recent study by IDC says it expects even more vendors to enter this market, which is expected to boom over the next few years. In 2003, the total sales in this category were \$105 million, according to IDC, but that is expected to grow to \$3.5 billion by 2008. Sales of multi-function platforms will cut into the revenues that today go to firewall/VPN appliances, IDC says.

This growth is in part because these multi-function products, which in many cases grew out of firewall technologies, are maturing and overcoming some of the shortcomings they may have had earlier, experts say. For instance, some suffered

See Multi, page 18

# Tivoli exec tackles security



IBM's on-demand computing strategy incorporates intelligent hardware and smart software working in concert to automate the allocation and provisioning of IT resources. To do this, the company contends IT managers will have to start bridging the gaps

between disparate systems, and Big Blue plans to help by putting security and systems management together to address identity, provisioning, configuration and compliance management. Arvind Krishna, vice president of provisioning and security development for Tivoli Software Group, spoke with Network World Senior Editor Denise Dubie about how IBM plans to bring security to its management wares.

### What is your role at Tivoli?

There are two missions. There is the formal day job, which is define the strategy, make sure all the products come out on time, monitor quality and support customers. Then there is

the real expectation, which is why provisioning and security are combined for my job that puts both sets of technology and products in one place. It was our intuition two years ago when we started down this path toward compliance and identity management. It's not enough to have two silos: one worried about managing people; the other worried about software delivery to machines. And there is another group just worried about putting together the infrastructure of a data center in terms of which server has what software connected to which piece of storage. There is a linkage between all these topics. And these processes need to cross each other so IT managers can know which user gets associated with which machines that has which piece of software.

### What does IBM propose to do to help customers handle those

IBM wants to give IT managers a place where they can go and look up that information. Our customers want to be able to find out who has access to which box and solve these problems in a way that is lighter weight and easier for an enterprise company or government agency to get this information. For example, we have a bunch of financial services

See Tivoli, page 18



### Tivoli

continued from page 17

customers and they have people that are completely obsessed and consumed by the identity management process. Customers also have Web services projects going on. If they are connecting their member institutions, in the financial services case, to their back-end applications, it would become a lot faster if those Web services were linked to the identity management processes. You need to solve all of these problems in concert; it can't be one by one because then the projects become sequential and disintegrated from each other, which really causes both the slowness and the complexity that we see today.

So in IBM's view, systems and security management will be linked

### going forward?

Absolutely, our recent announcements [www.network world.com, DocFinder: 7546] seemed more like systems management, but that was not actually our intent. We were saying that there are many processes, and identity management and security management are two of the processes amongst the 15 or 16 of those we identified as critical to enabling on-demand computing. Sometimes how those separate processes link into the others, which are equally important, is forgotten or ignored because we don't always say it explicitly.

# IBM sees Tivoli as delivering integrated security and management products, but what does it offer in terms of security event management products?

Today, to be honest, it's more that we are exploring it than me being able to point you to some of our products and declare that they are the strongest, because that's not true. We have some capabilities, but I would say it's

not true that we are anywhere near as strong today as we are in the identity, directory and access side of security capabilities. At the same time, I am not sure who is.

### How much R&D do you invest in, in terms of security-specific products?

In a formal sense, IBM will tell me that we do not answer that question. But let me give you some hints around that question. I would say that when I look at the direct number of people as opposed to dollars working on the R&D of products that are out in the security market, it's somewhere in the upper three digits. So it's not quite 1,000, but it's more than 500. And that doesn't include anyone selling or marketing, this is just straight R&D.

### When does acquisition become the more attractive option for IBM?

There is a law of physics in software engineering: It will take two years. You just need a certain amount of time to develop the design, to build it correctly, to do the appropriate testing and to iterate it once or twice out in the field before it's ready. So if it's a case of something that is really important to the context of our technical strategy and it will take maybe two years to get it out there, and if there is a vendor out there that has pretty good technology that we determine integrates well enough with what we are planning, then an acquisition becomes attractive. We are always on the lookout. IBM deals with a lot of venture companies from that perspective.

### Why is it important IBM take part in open standards?

You need to integrate with other products, because in today's world it would be overly arrogant for anyone to presume they could provide all the answers to any customer. If you are to do that, you need to do so in a way that is easiest for everyone. I'll call it the virtue of open source. An open standard gets lots of very bright people working on it so you come out with something that people will accept as satisfying

their needs. And I believe public inspection, much like in government, is a wonderful thing. It exposes mostly all the redundant, useless and wasteful elements, and forces us to improve because the embarrassment of it in public is not good. At the same time, some people will always say, 'Doesn't that give away your competitive advantage or strength?' And my response is always, 'We should make some things a common standard and then win on the basis of our superior execution and implementation, not on the basis of locking customers out of something?

### What about open source?

As long as you have the correct legal protection around the licensing, and as long as there is a body of people supporting that work and technologists volunteering to support the work, then it can certainly be a good thing. I can look at a lot of what is happening as very worthwhile causes.

### Multi

continued from page 17

performance hits when all security platforms were turned on, says Zeus Kerravala, an analyst with The Yankee Group. "They didn't scale very well because they were a firewall, and they added other security to it later. But now they have a lot of processing power to handle all functions," he says.

### Rampant skepticism?

Despite effort by vendors to deal with shortcomings, end users are still skeptical, according to a poll of 653 IT managers from businesses with at least 1,000 employees. Fewer than one in five prefer the stand-alone, multi-function security devices; most of them prefer multiple, single-function appliances, according to an unpublished study by Forrester Research

"That's mostly because of the immaturity of the all-in-one type devices," says Rob Whiteley, an analyst with Forrester. "What's been out there really didn't have sufficient horsepower to handle all-in-one. It defeats the purpose of security if your box fails and thus is more of a risk that it ever was."

For this reason, Summit Information Systems in Corvallis, Ore., dropped a Nokia IP440 firewall/VPN/intrusion-protection platform, says Ken Pearson, network manager for the firm. I had an instance where we were running [multiple functions] on the same platform and it flat ran out of

horsepower. I had to split the functions to keep up," he says. The company now uses separate firewall, intrusion-detection and intrusion-prevention platforms. "It's a bit more trouble, but it's worth it."

Provell, a marketing firm in Minneapolis, agrees that many individual devices are preferable, but not because of performance slowdowns. It uses multiple systems to backstop each other, says

### "You're going to find you get a much greater level of reliability and security."

Rob Whiteley, analyst, Forrester Research.

William Wells, the company's technical support manager.

For instance, Provell's Internet router blocks certain ports, and its firewall is configured to block the same ones. "I've always taken the approach that anything coming in from outside should pass through at least two distinct security systems which use different approaches and complementary rules. While both may block or allow the same ports, they do so in a different manner," Wells says.

Not everyone feels the same way. "The probability of human error is geometrically higher with a bunch of single function boxes," says Roger O'Daniel, a net-

work and security consultant also in \* Minneapolis.

"A high-quality multi-function box with built-in redundancy and powered by high-quality [uninterruptible power supply] will do a better job than a bunch of single-function boxes that get into each other's way," he adds.

### Taking the time

Some customers, though, are unwilling to spend the time to get independent security platforms to work together. For instance, Yellow Book USA uses many single-function devices so security staff can focus on specific tasks and the security parameters associated with it, says Bill Flusek, Yellow Pages' enterprise infrastructure architect.

"It does mean that you have more devices, and I suppose the chance of a misconfiguration is higher that way, but it may still outweigh the potential problems that exist with several functions with different security needs within a single system," he says.

The Yankee Group's Kerravala says that vendors working out management that supports a single-policy engine that applies a central policy across all the platforms' different functions are lifting worry.

Another concern is that if a multi-function box fails, the network is left without protection, but Whiteley says that objection is being overcome as these devices mature.

The failure of a single function won't bring down the whole box and they can be configured with two running in hot-failover mode so if a process on one fails, the other picks it up immediately.

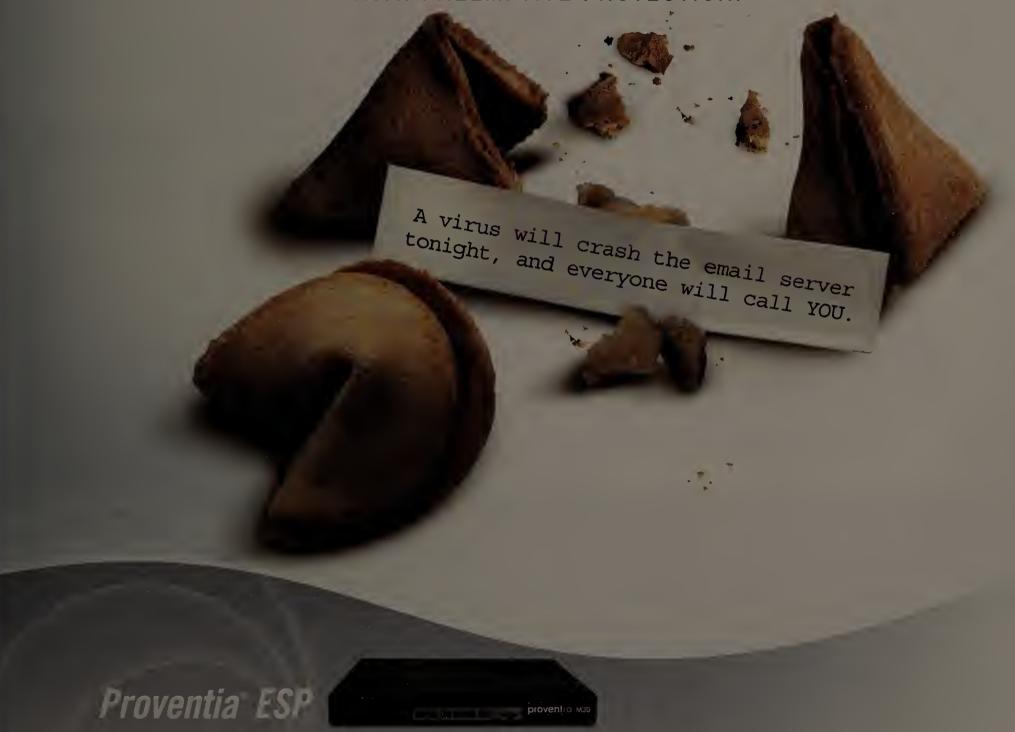
"You're going to find you get a much greater level of reliability and security at a much more affordable cost," he says. "It allows you not only to deploy it in places like headquarters but it allows you to drop-ship these preconfigured devices to branch offices and employ a certain amount of security that was never present there before."

While many customers weigh multifunction vs. single-function devices, a third possibility is that security can be embedded in network devices such as switches and routers, Whiteley says. According to Forrester's survey, this option is most popular in networks of businesses with more than 20,000 employees. "It looks like that's because they have these more expensive things like a [Cisco] Catalyst switch, so they can afford to put a PIX [firewall] blade in it. They can afford to have a more holistic view of network security."

Ultimately, though, Whiteley says that network management platforms with central security policy engines embedded will be able to deliver the policies to whatever devices are installed in the network. "Eventually it's going to be a network management more than anything else," he says.

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# Foundry launches all-fiber Gigabit/10G switch

BY PHIL HOCHMUTH

Foundry last week launched a fixed-configuration, all-fiber switch aimed at letting users aggregate Fast and Gigabit Ethernet links into fat 10G

Ethernet pipes.

The FastIron Edge X424F switch could be deployed as an aggregation point for a campus network connected via long-reach fiber, or in metropolitan Ethernet service provider networks offering "fiber to the curb" services. The mostly-fiber switch is primarily aimed at long-distance links, instead of in-building LAN or data center connections.

The box includes 24 small form factor pluggable slots, which can be fitted with Fast or Gigabit Ethernet fiber optical modules, which can reach almost 100 miles in range. The device also includes

four additional copper Gigabit Ethernet ports and four fiberbased Gigabit ports for connecting peripheral devices or other switches.

The back of the switch includes slots for a single-port or dual-port 10 Gigabit Ethernet uplink. These ports use 10 Gigabit Ethernet small form factor pluggable optical insert modules.

Security features of the switch include 802.1X authentication, and support for dynamic virtual LAN (VLAN) and access control list (ACL) traffic assignments; this can let the switch interact with



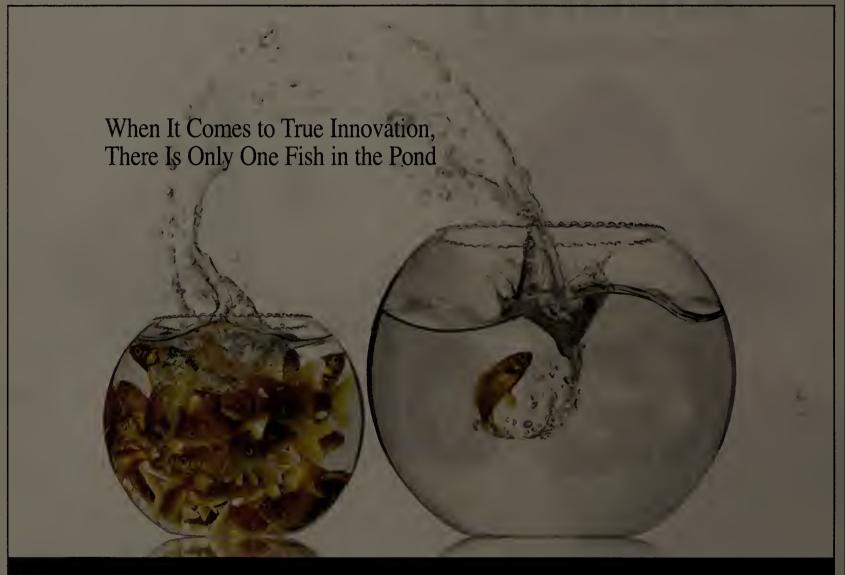
Foundry's Fastiron Edge X424F switches can be located almost 100 miles apart.

third-party network quarantine agents or other security software, where agents tell the switch to segment traffic to secure segments, or to activate ACLs that block access to certain network protocols or applications.

The Fastlron Edge X424F will compete with all-fiber, fixed-configuration switches from 3Com, Allied Telesyn, Cisco and Nortel.

The list price for the X424F is \$10,000. A single-port upgrade to 10G Ethernet costs \$3,495 and a dual-port 10G upgrade is \$5,500. For another \$1,000, the box can be upgraded to full Layer 3 switching, with support for RIP, OSPF, BGP and other protocols. The switch will be available in August.

Foundry's grip on the Layer 3 10 Gigabit Ethernet switch market slipped last year, as the vendor's share of worldwide revenue from the technology fell from 38% in 2003 to 13.5% in 2004, according to Synergy Research Group. Observers say while Foundry's 10G technology was popular with niche customers when 10G was first emerging, as 10G has become more broadly adopted, mainstream users interested in the technology are turning to Cisco — which leads the entire Ethernet switch market with 70% market share.



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# **Brocade expands beyond Fibre Channel wares**

### BY DENI CONNOR

Even for a company like Brocade Communications that has made a name for itself selling Fibre Channel equipment, the storage network technology isn't enough.

The company, which has lost market share and produced modest financial results of late, is making moves to better exploit its installed base of Fibre Channel switches, as well as expand into new data management areas. Last month, Brocade introduced storage-area network (SAN)based server provisioning software, plus a wide-area file services (WAFS) appliance.

"Vendors have to get some stickiness associated with their Fibre Channel switches because it is very easy for users to change vendors," says Robert Stevenson, technology strategist for Nielsen Media Research in Oldsmar, Fla., where he has more than 40 Brocade Fibre Channel director-level and fixed-port switches. "If they don't get some intelligence on top of their fabric they are going to be at risk of

losing market share, particularly as iSCSI and 10G bit/sec Ethernet take off."

The leading supplier of Fibre Channel director-level switches not long ago, Brocade has fallen behind Cisco and McData. Mike Klayko, who replaced longtime Brocade CEO Greg Reyes in January, has stated his displeasure with the company's roughly \$600 million revenue growth. It is against this backdrop, as well as in light of conservative industry projections for the Fibre Channel switch market, which Brocade is expanding its product line.

"Fibre Channel networking is a mature market with only modest growth estimates," says Stephanie Balaouras, senior analyst for The Yankee Group. "If these companies are going to grow they need to expand beyond their traditional businesses, enter new markets and increase their offerings and their depth."

Brocade's new Tapestry Application Resource Manager (ARM) software runs on the company's Intelligent Application Platform appliance and is designed to connect servers to SANs. The software, which Brocade acquired from Therion Software in May, builds an image of the server operating system, applications and data, and stores it on the SAN. When a server fails, it can be rebooted from the SAN using the image.

"We've been really pushing for this technology for the past six months," Stevenson says. "It flips around how we do server management because you are managing images on your SAN instead of managing image"operating systems.

Tapestry ARM is in early testing with several of Brocade's OEM customers and will be generally available this fall.

Brocade's other new offering, the Tapestry Wide Area File Services box, is the result of a \$7.5 million investment in WAFS vendor Tacit Networks.

Brocade is rebranding the Tactit appliances, which synchronize data changes between remote offices and data centers. The \$7,500 appliances, which communicate with each other via a WAN-optimized protocol, reduce the chattiness of Network File System and Common Internet File System protocols and allow read-write access to files across WANs at LAN speeds,

Others in the WAFS market include Availl, Cisco, DiskSites, HP and Novell.

# Short Takes

■ NSI Software announced last veek enhancements to its Double-Take server replication software for Windows. The product now includes a feature called Enterprise View Server Groups that lets administrators organize servers into groups by division, branch office or application so they can manage and monitor them better. The company also added the Enhanced Failover Monitor, which lets companies integrate Double-Take failover capability into enterprise management consoles. Double-Take is priced starting at \$2,500 per server.

■ **Dell** says it plans to bolster its PC business with a high-end product category for buyers with more expensive tastes, a company executive says. The new category, which has yet to be named, will consist of desktops and notebooks priced between \$1,200 and \$3,500, Dell says. The company expects to make the products available in the second half of the year.

# **Unisys touts on-demand servers**

### **BY JENNIFER MEARS**

Unisys, which leads the high-end Windows server market, is bringing capacityon-demand features to its ES7000 servers, enabling end users to turn on processing power as needed.

The company last week announced the availability of real-time capacity (RTC) for the ES7000, which comes with Intel Xeon or Intel Itanium processors, and is typically used to run important applications such as databases and business intelligence. The box, which scales from four to 32 processors, now can be purchased with stand-by processors that can be remotely activated if customers need the additional power.

Reusch International, which provides payment and global currency services to companies worldwide, recently bought four ES7000 RTC servers to help it prepare for possible spikes in demand.

"I can see not only linear growth that I can project, but I can see potentially a big acquisition that can dump huge processing loads on my infrastructure," says Radomir Zamurovic, CTO of the Washington, D.C., company. "I needed the hardware to

With the ES7000 RTC, Zamurovic has four active processors and four standing by."Instead of having a half empty box that I would have to take down and open and install new CPUs, I have the processors al-

ready installed and they can be remotely activated," he

The idea is to share the financial risk with customers and help drive data center utilization rates above the average 15% to 20% experienced today, says Mark Feverston, director of platforms for systems and technology for

"We're offering [customers] the ability to have just the right amount of capacity they need at any time and not have to gamble or guess about how much they'll need three or five years down the line." he says.

The way the system works is that customers can buy an ES7000 running Windows or Linux with four, eight or 12 active processors and four inactive processors. Each inactive processor can be permanently activated and bought.

Later this year, users will be able to temporarily turn on processors and then turn them off up to four times before buying them permanently. Feverston says there will be a 10% premium for this service, but that



With Unisys' new real-time capacity feature, companies can ramp processing power up and down on the Intel-based ES7000 running

will be factored in to the final purchase price so that the cost never exceeds what a customer would have paid for the larger system up front.

Unisys Sentinel management software turns on and off processors with the click of an icon, sending encrypted authorization keys through a secure Internet connection, Feverston says.

Analysts say Unisys is bringing Unix-like capabilities to the Windows world.

While Unisys had less than a 2% share of the overall \$15.9 billion worldwide Windows server market in 2004, it held 75% of the market for Windows servers that cost between \$250,000 and \$500,000, according to IDC.

"Unisys is continuing to push the envelope and say, As long as we have a scalable Windows server let's give it features people have come to

expect in the Unix server space and in the mainframe space," says Jean Bozınan, an analyst at IDC.

Unisys competes with as IBM, HP, Fujitsu and NEC.■

# HOW DID ONE COMPANY REDUCE ITS TCO? THEY SWITCHED FROM LINUX TO WINDOWS.



"When we calculated the total cost of ownership for Red Hat Linux using a 10-year Net Present Value Model, we were surprised at how much higher it was than for Windows.""

— J.E. Henry, CIO, Regal Entertainment Group

Regal Entertainment Group, the largest movie theater operator in the U.S., ran its POS concession and ticket terminals on Red Hat Linux. However, they saw that it lacked the vendor support and remote management tools they needed to support their strategic plans. After an in-depth comparison, Regal found that Windows Embedded would deliver a lower TCO, improved security, and fewer risks. "With Windows, we get an integrated, easily managed platform that can extend from the data center to our POS devices," says Cliff DeYoung, CTO at Regal.

To get the full case study, other case studies, or third-party findings, go to microsoft.com/getthefacts





# Red Hat CEO touts 'very early stage' market

Matthew Szulik on acquisitions, expansion and singing with a choir.

If anyone can be called an evangelist of the commercial value of open source soft-

ware, it's Matthew Szulik, CEO of Red Hat. He has guided the company to profitability as other Linux start-ups have gone down in flames around him, all the while managing the difficult task of succeeding in both the open source software community and the enterprise data center. He spoke last month with IDG News Service correspondent Robert McMillan at the Red Hat Summit in New Orleans.

Sun had been hinting for a while that it was working on a major acquisition, and at one point even suggested that it might consider purchasing Novell. Did you breathe a sigh of relief this week when you found out they were purchasing StorageTek?

No. I've come to the conclusion that when people make big forecasts about big acquisitions, they usually become underwhelming.

What about the issue of consolidation? This is happening so much in the software industry right now. Is that going to happen with the Linux industry as well?

I don't think so.

### You don't think Red Hat or Novell is going to get picked up by a larger company?

Well, I couldn't speculate on that, but I don't think the industry of open source is at a point of maturity. I don't think the economic models are exhausted, as they are in the proprietary software business. So I have a hard time reconciling the economies of scale that that would create.

I had a chance to speak at Harvard a month ago, and I

met 20 ClOs who manage IT budgets of \$500 million or larger. So these were very, very serious IT executives. And many of them had small deployments; nothing strategic. My take-away from that was, 'Holy mackerel! This is still a market at a very early stage.'

So if you believe that, what would we consolidate besides pretty robust technical talent? Now, when you look at our last two acquisitions, we consider those to be highly strategic. One was in the area of file systems, which of course is incredibly important. And the Netscape [directory server] asset was an asset that we had been tracking for four years. We had been paying attention to that asset because of the lack of domain experience in building directories [and] the strategic importance of being able to deliver advanced levels of security, certificate management. This is highly strategic for our company.

And then you look at what's happening as you get databases and application servers. Is that really a compelling

# Fedora Linux set for upgrade

ed Hat is readying the first major update to its free Fedora Core Linux distribution since November 2004.

Expected Monday, Fedora Core 4 will be the first release of the company's Linux operating system to include support for the Xen virtualization software. It will also mark the first time the company has included community-contributed features, called Extras, in a new release

Fedora Core 4 will include a number of performance enhancements, integration with the Red Hat Global File System, and updated versions of the compiler and desktop software used in Red Hat's Linux.

But perhaps the most high-profile new feature will be the Xen software, which allows users to run more than one copy of an operating system on the same computer. When used in combination with Intel's Vanderpool Technology, expected to soon begin appearing in chipsets, Xen allows users to run copies of Windows and Linux simultaneously on the same computer.

Xen is still in the early stages of development, but over the next year Red Hat plans to develop tools that will make it easier for administrators to configure and manage "virtual" copies of the operating system using Xen, says Rik van Riel, a Red Hat engineer. Red Hat originally released Fedora as an unsupported alternative to its Red Hat Enterprise Linux product.

Fedora includes many cutting-edge features, such as Xen, that are intended for inclusion in upcoming versions of the enterprise edition. Unlike Red Hat's commercial products, however, users are free to make as many copies of Fedora as they wish, without paying for support licenses.

Red Hat was initially criticized for dictating what features would and would not be in the Fedora release. This year, however, it launched the Extras project as a way to let contributors outside of Red Hat decide what features to add to the release.

Jeffery Tillotson, a systems administrator with health-care equipment maker Elekta AB, says he will rush to download the new release, but will wait a few months before deploying it, in order to get more comfortable with the software. Elekta uses an earlier version of Fedora Core on about 25 of the company's Intel-based servers to handle file sharing and software development, he says.

Though the Xen technology may be interesting. Tillotson says he has no plans to take advantage of it at present. "We spend so little on each box, it would cost us more to put (our applications] all on one big box," he says.

- Robert McMillan

business for Red Hat to think through? That's not clear to me right now, and I don't hear our customers asking for it.

### So where do you see Red Hat getting traction beyond being an operating system provider?

"The next-deepest

competitor that has

always provided a

roadblock is Microsoft."

In 2004 there were \$19 billion, globally, in Unix systems sold. So when people say, 'Are you going to grow past an

[operating system] company?' I say, 'Don't get bored with this Unix-to-Linux migration. It's still in its infancy.'

We want to continue to be pragmatic and not be overzealous and give in to the siren call of Wall Street: 'Go buy company X,' or 'Go

buy company Y. And then we have an enormous integration problem: Witness our competitors. You miss out on the speed with which the industry is moving while you're trying to integrate a disparate culture, a disparate set of people who may not have the same motivations as you.

### Who do you worry most about as a competitor right now? Microsoft.

### Why Microsoft? You were just talking about Unix-to-Linux migration.

When I look at the Unix competitors, HP seems to be de-emphasizing its Unix business. We continue to take

share away from Solaris. The next-deepest competitor that has always provided a roadblock is Microsoft.

# Red Hat's critics have charged that open source reduces the amount of money that can be made by IT vendors. How do you respond to that?

Did Microsoft take money out of the IT industry when we moved from mainframe computers? No. Sun and Microsoft and other entrepreneurs at that time took enormous personal risk and created great companies recognizing that sea change.

# I've seen a lot of CEOs give keynotes in my time. I've never seen a CEO sing with a gospel choir [as Szulik did at the Red Hat Summit]. Why did you do that?

You and I go to enough of these things, and you watch a boring white guy like me get out on stage, who's forty-something, and delivers a message that 97% of the audience pays no attention to. These people have flown in from all over the world. It's Red Hat: They have high expectations of something that's unique and positive.

Second of all, we're involved in a global community. This is not about extermination of your competitor. So to see a white guy up there with an African-American gospel choir should send a message to people about the importance of community.

And, most importantly, it's not to take ourselves too seriously.



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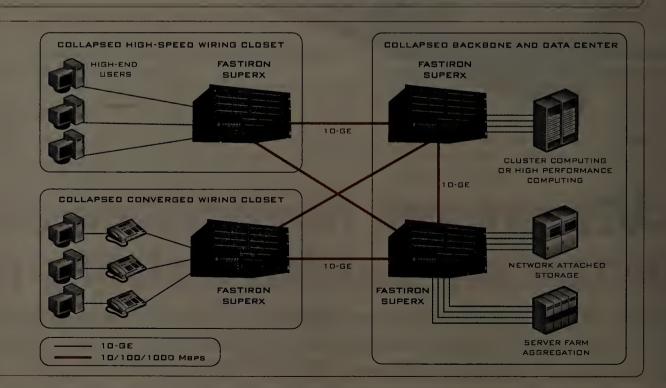
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# Novell: The old cash cow ain't what she used to be



**Dave Kearns** 

Union Pacific Railroad 25 years ago - "When I was in the railroad business, I used to say, 'You can't get the freight to the location unless you put the tracks down.' We are laying tracks right

now in many, many different ways in the company. It's going to start showing up in revenue growth and earnings going forward, or we wouldn't be doing it." That's a worthy sentiment, of course, but at some point you need to look at the tracks and see if anyone is actually moving freight over them. If not, it's time to pull up those tracks and put them to better use elsewhere.

Kearns, a former network administrator, is a freelance writer and consultant in Silicon Valley. He can be reached at wired@vquill.com.

Novell's recent quarterly financial announcements brought a good news-bad news mix for NetWare that's almost becoming the permanent snapshot for the company. Once again, for what seems like the 100th quarter in a row, NetWare was Novell's top-selling product. And once again, for what seems like at least the 20th quarter in a row, NetWare sales were down year over year.

NetWare continues to be the cash cow for the network pioneer, but that cow's getting old and the milk is drying up.

SuSE Linux is supposed to be the young calf that will take NetWare's place, but you can't get as much return for the Linux - there are too many groups willing to give it away.

Novell's plan is to foster both open source and closed source software as a "mixed source" solution that provides better tools than either "pure" open source or "pure" proprietary operations. License fees from the closed source, maintenance and support fees from the open source and training services for both are the revenue producers in the Novell business plan.

To that end, they sponsor quite a large number of open source projects with both services (Web sites, collaboration services) and human capital software engineers paid by Novell but spending all their time developing open source applications.

It's hard to tell from the financials released by the company, but it appears that the cost of maintaining the open source movement is certainly costing more than the profits, and possibly costing more than the revenue, from all of the company's Linux connected products.

According to CEO Jack Messman - who worked for the



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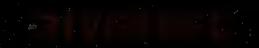


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### Short Takes

- Nortel last week announced a plug-in for Microsoft Outlook to let companies with its Media Convergence Servers integrate voice and other forms of communication with the widely used e-mail client. The plug-in, called the Multimedia Office Client, is designed to let employees use voice, video and text messaging through Outlook. It will even work with current analog voice switches in companies or analog Centrex systems provided by carriers, the company says. MCS uses Session Initiation Protocol for the translation between current analog voice switches and IP communications applications. The Multimedia Office Client is now in customer trials and is expected to be generally available on the MCS 5100 and 5200 platforms in the fourth quarter, according to Nortel.
- **YMware** last week introduced a service that includes less-expensive access to its virtualization products, with the aim of making it easier for corporate customers to deploy applications in virtual environments. The VMware Technology Network gives developers access to pre-built virtual machines that include applications from companies such as BEA Systems, MySQL and Oracle; a host of resources, including technical support, discussion forums and white papers; and access to all of VMware's products. A yearly subscription to the network, available at www.vmtn.net,
- India's business process outsourcing industry could face a workforce shortage of 262,000 employees by 2009, a senior government official said last week. Estimates place the BPO industry's workforce requirement at 1 million staff by 2009. The BPO industry in India posted exports of \$5.2 billion in the fiscal year that ended March 31, up by almost 45% over the previous year, says India's National Association of Software and Service Companies.

# Salesforce.com battles rivals

### BY STACY COWLEY

As Salesforce.com's star continues to rise, analysts are stepping up their warnings to customers that hosted applications can carry steep costs over the long run, especially for larger organizations.

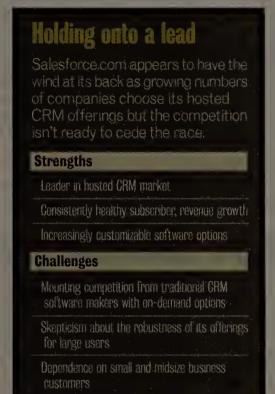
Salesforce.com recently reported firstquarter results showing growth of more than 80% in its paid-subscribers count and revenue from the year-ago period, and followed that news by announcing two highprofile endorsements this week: a partnership with Accenture and a 5,000-seat licensing deal at Merrill Lynch.

Gartner estimates that after three years, the cost for complex organizations of running Salesforce.com will surpass that of traditional, packaged CRM software. Sales force.com's strength is salesforce automation features; while it offers tools for customization and adding additional applications to its platform, building out those features requires a customer to invest the resources himself or work with a third-party independent software vendor.

Gartner cites integration of production planning and scheduling information from logistics systems, complicated pricing contracts, detailed quotation information and access to customer financial data from accounting systems as areas where Salesforce.com may not be robust enough to support complex customers' needs without additional, potentially pricey, customization.

In a report issued recently probing the return on investment Salesforce.com delivers to customers, Nucleus Research found most customers reported positive returns, with the scale of those returns depending primarily on how rudimentary the customers' previous CRM efforts were. More than 70% of the 29 Salesforce.com customers Nucleus polled were replacing a basic or paper-based contact management system; for these users, the ability to access information in one unified database delivered immediate time-saving and better sales visibility.

Nucleus also found that while Sales force.com touts marquee customers such as Merrill Lynch, big enterprise deals remain rare exceptions for the company. Sales force.com's average deal size is for 17 users, and in Nucleus' survey, 45% of respondents were running Salesforce.com for fewer than 100 users. More than 90% of those polled



had fewer than 500 users. The danger for Salesforce.com is that smaller customers are the ones most likely to jump ship: More than a third of Nucleus' respondents said they would consider changing CRM vendors or were in the process of doing so.

"People are more open to switching," said Rebecca Wettemann, Nucleus' vice president of research. "If you've reached the point where you have positive ROI from an on-premise solution, you're probably not going to change. Whereas with an ondemand solution, unless you've done a lot of work on customization, you haven't invested as much and might be open to other options."

Salesforce.com doesn't disclose its renewal rates. Executives brush aside questions about the issue by pointing to Salesforce. com's track record of constant subscriber growth over the past four years; Phil Robinson, Salesforce.com's vice president of global marketing, said the company is satisfied with its ability to hold on to current customers and win new ones.

With 267,000 subscribers from more than 15,000 organizations, Salesforce.com currently holds the lead in the hosted applications market it helped legitimize. Faster than many would have predicted, it has carved out a sizable chunk of the market: The \$64.2 million in subscription revenue it reported last quarter isn't far off the \$75 million traditional CRM leader Siebel brought

See Salesforce.com, page 32

# Management vendor develops Exchange tool

### BY JOHN FONTANA

E-mail management vendor DYS Analytics later this month will release a desktop performance-monitoring tool that provides corporations with usage statistics and analytical data to help troubleshoot and manage Microsoft Exchange.

The company's Email Control Desktop Edition for Microsoft Exchange includes two modules: TrackNow for real-time analysis of user status and message routing, and InvestigateNow for historical reporting on user activity and usage.

The software is based on DYS Analytics' Control management software, an e-mail management tool that requires the use of a back-end database. The desktop version does not have that same requirement and

is targeted at midsize businesses that need management tools but not at the expense of deploying a full database.

The software installs on an administrators computer and uses Microsoft's stand-alone Microsoft Desktop Engine (MSDE) database for storage of data.

"We wanted to monitor who was on Exchange, who were our biggest users, who was sending the most e-mail, things like that," says Dave Vigneau, network services manager for Saint Anselm College in Manchester, N.H. Vigneau couldn't afford an expensive SQL Server deployment, but he got what he was after. With the software Vigneau found hundreds of inactive accounts and their bloated mailboxes and

See DYS, page 32



NET INSIDER
Scott Bradner

On June 1, Part 682 of Title 16 of the U.S. Code of Federal Regulations went into effect. These rules concern the disposal of consumer report information and records. They eloquently demonstrate the inability of lawmakers to craft general solutions to general problems.

The rules (www.networkworld.com, DocFinder: 7532) require that anyone who has a consumer

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report about someone to properly dispose of the paper or electronic records when done with them. This means "burning, pulverizing or shredding of papers" and the "destruction or erasure of electronic media."The term "consumer report"used in the rules is defined in the Fair Credit Reporting Act (DocFinder: 7531) and means "any written, oral, or other communication of any information by a consumer reporting agency bearing on a consumer's credit worthiness, credit standing, credit capacity, character, general reputation, personal characteristics, or mode of living" to be used to determine credit or for employment background checks.

The disposal rules are part of the

Fair and Accurate Transaction Act of 2003 (DocFinder: 7533). This 61page act covers a lot of good stuff, including your right to get free copies of your credit reports; the right to add a fraud alert in your record at the credit reporting agencies (to prevent credit being extended to you without your specific OK); truncating credit card and Social Security numbers on printed materials; and your rights when trying to correct information held by the credit reporting companies. It also spends a lot of pages trying to preempt ways that the credit reporting industry might try to get around obeying the law.

What the Fair Credit Reporting Act and the Fair and Accurate

Transaction Act lack are any overarching principles. Such a principle might be that an individual could opt out of having any credit report-like information shared about themselves, unless the distribution is in conjunction with a legally constituted law enforcement or terrorism investigation. If I'm not trying to get additional credit cards or loans I should be able to just say "no." Instead the laws focus on particular details, missing many that will have to be patched later.

For example, the disposal rules only apply to "consumer information," which means "any record about an individual . . . that is a credit report or is derived from a credit report" and ignores any

requirement to properly dispose of other information that a business may hold about individuals. It would have been easy for Congress to stop the definition of consumer information after "record about an individual" — but that would have been far too pro-consumer.

Disclaimer: I do not know if Harvard's Kennedy School of Government has classes on when to stop, but it's far from sure that politicians are likely to listen even if it does. In any case, the above lament is my own.

Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sobco.com.

# Microsoft plans mobile push

BY JOHN BLAU

For its Windows Mobile 5.0 handset software announced in May, Microsoft plans later this year to offer an upgrade that will provide customers push e-mail technology and improved security management.

The Messaging and Security Feature Pack for Windows Mobile 5.0, announced last week, is software based on wireless features that will be added to Exchange Server 2003 in Service Pack 2 (SP2).

"One of the key components of the Messaging and Security Feature Pack is to enhance the Outlook mobile experience by pushing e-mail from Exchange to handhelds equipped with Windows 5.0 using our new Direct Push Technology," says Jason Langridge, U.K. mobility manager at Microsoft.

"Another key component is to provide the ability to protect managed devices directly through Exchange," he adds.

Outlook information, including e-mail, calendar and contacts, will be pushed through a direct connection between Exchange and a Windows Mobile device, providing users with immediate access to Outlook information, without the need for a third-party network relay service, Langridge says. "Many enterprise users are concerned about having their data

sent through a third-party source," he says.

Users also could avoid the cost of using a third-party relay service with the new Microsoft technology Langridge adds.

As for security, via Exchange Server 2003 with SP2, IT administrators could remotely manage and enforce select corporate IT policy over the air, Microsoft says. For example, administrators could mandate a personal identification number password to be set for every device, and set recommended and manda-

tory policies, as well as set exception lists.

In addition, the technology will let administrators remove all information from a device, over the air, and reset it to its original state, allowing them to better manage sensitive information on a misplaced Windows Mobile device, Microsoft says.

The Messaging and Security Feature Pack will be available in October, Langridge says.

Blau is a correspondent with the IDG News Service.

### DYS

continued from page 31

deleted them from the e-mail server. He then found all his users over their mailbox size quota and sent them a letter asking them to clean up their in-box. Control Desktop Edition also helped him discover that he had oversized the drives in his storage-area network that supports Exchange, a mistake he says he won't make on the next upgrade.

Control Desktop Edition works without placing any agents on an Exchange server. Once installed, the software discovers all the Exchange servers on the network and begins collecting data on the flow of messages to and from the server.

"We are focused on the user level. We look at how the user is interacting and not into the server analytics," says Andrew Wolff, vice president of products for DYS Analytics. "We solve some immediate administrative stuff like, "Who is sending out those huge messages?"

The software competes with similar products from vendors including NetlQ, Quest and some features of Microsoft Operations Manager.

Control Desktop Edition runs on Windows 2000, XP and 2003. It supports Exchange 5.5, 2000, 2003 and is priced at \$5,000 per server.

### Salesforce.com

continued from page 31

in from license sales. To counter Salesforce. com's jabs, Siebel prominently touts its base of 3.2 million users. It also fires off a press release every time its Siebel CRM OnDemand service wins a deal in which the prospect also considered Salesforce.com.

Showing growth isn't hard in the early years when you start from nothing, as Salesforce. com did in 1999, but the company's ability so far to sustain its momentum is winning over doubters like John Freeland, the managing partner of Accenture's CRM practice. "Eighteen months or so ago, I have to tell you, I was a skeptic on the business model," he said at a Salesforce.com event last week where the announced Accenture's partnership agreement with the company.

When Freeland first began tracking Sales force.com,he doubted whether it would move

beyond the mid-market into the large, enterprise customers Accenture works with. But Salesforce.com's gains over the last year convinced Accenture to devote additional staffing resources and executive-level attention to supporting the company. Accenture recently closed a deal to implement Salesforce.com at a major insurance company, Freeland said. And so Accenture, a longtime close partner to Siebel, will help Salesforce.com in its efforts to expand its enterprise presence.

Siebel is under fierce attack from shareholders concerned about its slumping sales and series of management changes — but for customers, the intensifying industry competition may be paying off. Three years ago, Nucleus issued a devastating assessment showing that more than 60% of Siebel reference customers it interviewed reported a negative ROI after more than two years of use. In a new set of ROI reports released last week, Nucleus placed Siebel at the top of the industry, for enterprise

and hosted deployments.

"What we've seen in the past year or so [at Siebel] is a refocusing on service — really, a greater sense of responsibility for making customers successful," Nucleus' Wettemann seid. Siebel's product road map, with an emphasis on analytics and vertical editions of its One Demand service, also is pleasing customers, the seid.

Meanwhile, Salesforce.com is facing its own escalating competition as it works to prove it can meet the demands of larger customers and deliver enough value to longtime subscribers to keep them paying monthly subscription fees.

"The challenge that they're facing is what happens to any first mover in a market," Wettemann said. "Other people start to really develop and focus on catching up."

Cowley is a correspondent with the IDG News Service.

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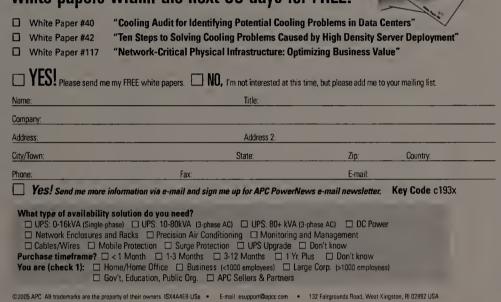
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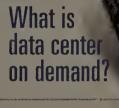


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## Facing competition, JBoss updates software

#### **BY JAMES NICCOLAI**

JBoss is reorganizing its partner program and considering moves into new types of software, including tools for building rich client interfaces, as it prepares to fend off increased competition from other providers of open-source middleware.

The changes to the JBoss certified partner program are designed to help customers find the most qualified providers in areas such as consulting, training and support services for JBoss products, said Sacha Labourey, the company's general manager for Europe, the Middle East and Africa.

Until now, the JBoss Authorized Service Partners program, or JASP, was an allencompassing program that did not distinguish among areas of expertise, making it hard for customers to know who was qualified to provide JBoss consulting services, for example, or to train staff on its software. As a result, service quality levels were inconsistent, Labourey admitted.

JASPs now must meet more stringent requirements to become certified, based

on criteria such as how many of their employees are trained on JBoss products. They will also be certified to offer either product support or training services, rather than both. JBoss created a new category of Certified Systems Integrators for companies that offer consulting, integration and support services.

JBoss also introduced certification for vendors, such as Computer Associates, Novell and Kronos, which embed or bundle JBoss technologies with their products, or that want to certify their products as having been tested to run on JBoss software.

The changes come at a time when JBoss, which established an early lead in the market for open source application servers, faces mounting competition. Most notably, IBM last month said that it had bought Gluecode Software, which offers training and support for an open source application server called Apache Geronimo. "The Geronimo-IBM deal is clearly an anti-JBoss move; we have the red light of the laser on

us," Labourey said.

In addition, the Java Open Application Server, or JOnAS, developed by Europe's ObjectWeb consortium, was recently certified compliant with Sun's J2EE 1.4 specification, considered a helpful step for adoption by corporations. JOnAS also won a distribution deal with Red Hat.

JBoss will compete by doing what it does best, Labourey said: Developing good software, and adding to its stack of middleware products, called the Java Enterprise Middleware System, or JEMS. JEMS currently includes its application server, Hibernate persistence engine, jBPM business process management engine and other components.

Labourey would like to expand that list into new fields, including software for building Web-based rich clients, he said.

"User interface development is really kind of painful," says Brice Dunwoodie, president of Web consulting company Cylogy. "Most techies don't really like it. Not to mention, you tend to do the same thing over and over again. So it makes sense that you have a tool kit that provides a library of widgets that are pretty smart and can be manipulated with server-side code."

At least a dozen "frameworks" for rich client development already exist, including Struts from the Apache Software Foundation, Flex from Macromedia, and Extensible User Interface from JWay Group. But the fact there are many is part of the problem, according to Labourey.

"When I see 20 frameworks doing the same thing in the market it's always a bad sign; a standard and some maturity is required," he said.

JBoss can extend its product lineup in one of four ways, he said. It can develop the software itself, hire lead developers from a current project, buy the copyright, trademark, URL and other assets of a current project, or acquire a company and release the source code for its product.

Niccolai is a correspondent with the IDG News Service.

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## OUTSOURCING APPLICATIONS

## Outsourcing HR applications growing up

BY ANN BEDNARZ

here's more to human resources application outsourcing than finding a service provider to manage a discrete chore such as payroll.

These days companies are handing over broad sets of HR functions — from payroll and benefits processing to recruitment and employee management — to service providers that promise to trim costs, streamline processes and deliver integrated performance metrics in return. IT staff have a key role to play in ironing out network, security and application details, experts say.

"Outsourcing of HR functions on a point basis — meaning a single process area, such as payroll or parts of benefits — has been around for a long time," says Steve Unterberger, HR outsourcing technology leader at services firm Hewitt Associates. "What is relatively recent in the last six years is the grouping of lots of HR transactional and administrative processes into a business process outsourcing arrangement." Over the last two years, the transition from an early adopter market to more mainstream adoption has begun, he says.

In its most recent quarterly index of outsourcing deals, sourcing advisory firm TPI reported human resources outsourcing is the fastest growing and largest segment of the broader business process outsourcing market. Total contract value more than doubled from \$545 million in the first quarter of 2004 to \$1.7 billion in the first quarter of this year, TPI says.

#### Big deals

Over the last few months, a number of brand-name companies have signed big HR outsourcing deals.

- PepsiCo chose Hewitt Associates for a 10-year deal focused on HR business process outsourcing services such as workforce and benefits administration, payroll and contact center support. The deal, announced in April, also includes HR application development and hosting services for 64,000 of the food and beverage giant's U.S. employees and 38,000 international employees
- BT and Accenture inked a new \$575 million, 10-year contract set to go into effect in August that expands on a current five-year human resources outsourcing deal between the two companies and includes recruitment, pension administration, payroll and benefits administration, performance management administra-

tion, and HR advisory and information services.

• Delta Air Lines committed to a sevenyear, \$120 million outsourcing agreement with Affiliated Computer Services (ACS), which will provide compensation and benefits administration, relocation services, recruiting, learning, payroll, HR information services, and employee call center services

The bundling of multiple HR-related functions into a single contract is what distinguishes these deals from traditional HR outsourcing deals. Clients expect service providers to not only fulfill current HR responsibilities but also streamline and better integrate key business processes.

After a few years of lean budgets, a lot of HR departments face a backlog of requirements for implementing new systems and services models, says Richard Stanger, a vice president of business transformation outsourcing HR solutions at IBM. "They want to improve their processes, reduce costs and put in more self-service capabilities, but they can't afford to do that on their own." HR outsourcing provides a means to upgrade without requiring a huge up-front investment, he says.

If companies decide to go that route, there should be a range of senior executives in on the decision — including the ClO. Suppliers should be evaluated not just for their HR expertise but also technology savvy, experts say.

There's a lot of IT work that goes along with the business aspects of an HR outsourcing deal, says Leigh Richardson, vice president of service delivery at Accenture HR Services. For example, security is a key concern as companies prepare to hand over sensitive data, such as payroll and personnel files, to a third-party services provider.

"The proper security has to be put in place," Richardson says. "It's very important that a client's IT team understand all the aspects of how we're going to deal with that data and how we're going to exchange data with that enterprise in a secure fashion."

IT considerations span applications, infrastructure, security and regulatory compliance issues, adds Hewitt's Unterberger. On the application front, the service provider will typically plan to supplement or replace client systems with its own technology.

With respect to network infrastructure, there needs to be close connectivity between client and supplier systems,

#### **HR outsourcing drivers**

Cost savings and a desire to focus on strategic HR tasks are among the most popular reasons companies are turning over more of their HR functions to business process outsourcing firms, according to advisory firm EquaTerra.

Gain measurable HR cost savings: 54%

Shift focus to more strategic activities: 44%

Leverage third-party expertise for transformation: 38%

Make HR cost structure more viable: 34%

Speed the transformation: 28%

Better address regulatory compliance: 21% source: Equaterra Survey of 589 HR and executive managers

Unterberger says. In general, companies that do business with external partners are familiar with the requisite security and connectivity issues that arise when systems extend beyond corporate firewalls. However, the sensitive nature of data that's swapped in an HR outsourcing arrangement can raise the stakes, he says.

"Some extra consideration to infrastructure needs to be given because of the privacy-related issues that may not have existed when these things were operating wholly within a client's networks," Unterberger says.

#### Dollar driven

As the size and scope of HR outsourcing deals has grown, one thing about the market that hasn't changed is its cost-cutting appeal.

ACS says its agreement with Delta will reduce the airline's HR and payroll services costs by more than 25% over the life of the contract. When Goodyear Tire & Rubber Company last year announced it signed a 10-year agreement with ACS for human resources services — including payroll, medical benefits administration, call center, training, recruiting and staffing systems — the tire company said it expects to save about \$45 million over the duration of the contract.

These savings opportunities are not isolated, analysts say. The Yankee Group found a 10,000-employee company can wipe 20%

from its total HR costs. The larger the company, the greater the financial impact: A 20,000-employee company could reduce workforce costs by 15%, increase revenue by 5%, and yield a \$1 billion-plus financial gain if it manages the HR outsourcing process well, according to the research firm

In general, the average running cost for HR business process outsourcing providers is between \$1,500 and \$2,000 per supported employee per year, depending on the type of HR functions managed, according to Philip Fersht, lead software and services analyst at The Yankee Group. "This is a significant savings when many companies spend upward of \$5,000 per employee per year in total HR costs — both on internal administration and some discrete third-party services such as payroll and benefits," Fersht wrote in a recent report.

The potential for cost savings, such as these, is a key driver of HR services growth. Outsourcing advisory firm EquaTerra polled 589 HR and executive managers and found corporate cost-cutting and process-improvement directives are driving companies to consider outsourcing. (See graphic.)

Vendor management also is a driver, Richardson says. Companies can consolidate management of formerly discrete outsourcing deals with payroll and benefits vendors, for example, as well as hand over related software and hardware procurement and maintenance responsibilities, he says.

In some cases, integration is the goal. "When a company does one of these big end-to-end HR outsourcing deals, there may be very little that they're outsourcing that wasn't outsourced before. But they're bundling it together and creating a single, integrated place for employees to get HR services," Stanger says.

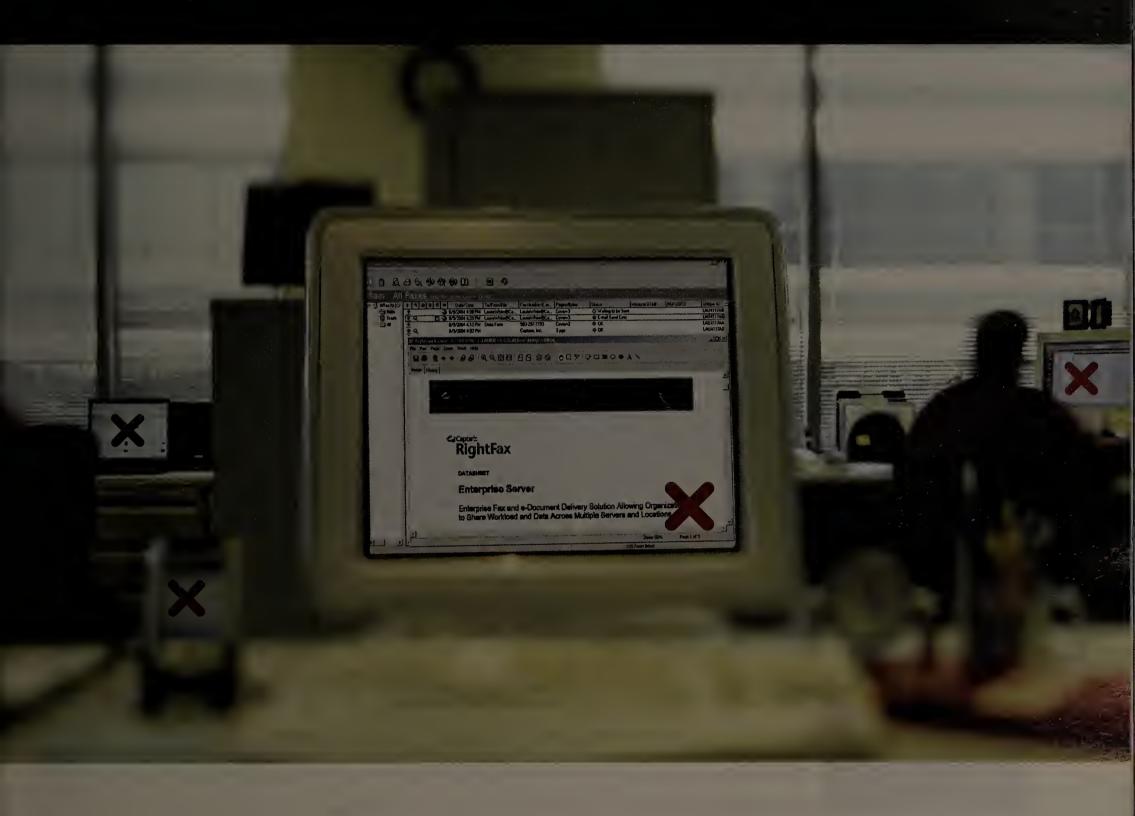
One advantage of an integrated delivery mechanism is the potential for broader, more useful analysis than executives can glean from isolated HR application silos, Stanger says. "You can take a look at who has taken training and how it has impacted their careers. You can look at managers all over the world and see whose people are advancing and whose aren't," he says. "You can get amazing information about staff all over the world that enables you to make the kinds of intelligent decisions about people that never would have been possible in fragmented HR delivery system."

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#### Short Takes

#### ■ BellSouth last week said it plans to launch a 6M bit/sec downstream broadband service for businesses and homes in the fourth quarter. FastAccess DSL Xtreme 6.0 will provide a fourth option for BellSouth DSL service. The others are FastAccess DSL Xtreme, which is 3M bit/sec downstream and 384K bit/sec upstream; FastAccess DSL Ultra, for 1.5M bit/sec downstream and 256K bit/sec upstream; FastAccess DSL Lite, at speeds up to 256K bit/sec downstream and 128K bit/sec upstream. DSL Xtreme costs \$34.95 per month. DSL Ultra costs \$42.95 and DSL Xtreme costs \$54.95. BellSouth says it has not yet established pricing for Xtreme 6.0.

- New Edge Networks, a national broadband service provider, announced last week that it is bringing in more than \$1 million in new sales from its Retail Broadband Alliance. The alliance, which is designed to let merchants easily migrate to New Edge's broadband network and provides them with direct interconnections with four national credit card payment processors, was launched in November. The service provider says the Retail Broadband Alliance is specifically designed for small and midsize retailers that might not have the IT departments to manage dozens of locations across multiple states.
- Gigabit Ethernet passive optical network vendor Alloptic last week announced the availability of a product capable of delivering 15M bit/sec of symmetrical Ethernet traffic over a standard phone line. Alloptic's Xgen7000 allows the copper wiring in buildings or neighborhoods to carry high-speed Internet, IP video and traditional voice services in excess of the current speed of xDSL technology. It is designed to complement the company's Gigabit Ethernet PON products, which are used to carry services into neighborhoods or buildings where the Xgen7000 uses existing copper telephone lines for delivery

## **AT&T collaborates with Microsoft**

#### BY DENISE PAPPALARDO

AT&T is promising a host of new collaboration services based on a five-year agreement with Microsoft it announced last week at SuperComm 2005 in Chicago.

AT&T will deploy Microsoft's Connected Services Framework (CSF), which is designed to let service providers aggregate, provision and manage converged services.

"We're integrating CSF with our serviceoriented platform. It will interoperate with our VolP control layer as well as with our [operational support systems]. This will revolutionize the way next-generation IP collaboration services are developed and delivered," says Eric Shepcaro, vice president of strategy and business development

Shepcaro says with the Microsoft platform, AT&T will be able to offer "right-time" communication between applications and a multitude of devices on AT&T's IP network. He says this will include integrating real-time audio applications, as well as applications such as presence and directo-

ry services. Applications will become network aware and deliver content to "end users on the right devices, in the right format, at the right time," he says.

Both companies also are developing services for AT&T, which will include Web cast. Web conferencing, integrated Vol Ppresence and messaging, says Chris Molke, director of services over IP at AT&T.

AT&T already offers some of these services, but the carrier says the difference will be in how these services can be used.

"Rather than opening a Web page and putting in your logon and password to upload a document for a Web conference, users will be able to right click on a Word document and pull people into a Webcasting session," Molke says. Users will have the option of setting up a one-way or bidirectional conference with others who they can see are available to participate, he says.

Word documents are static for most users today, but what AT&T is promising is an interactive platform where, through a portal, users will be able to see the author's name,

where he is, if he's available and his preferred means of communications.

The carrier says its first set of services will be centered on collaboration tools and are scheduled for availability early next year.

Microsoft's CSF is a server-based package that uses service-oriented architecture and Web service interfaces. The platform works with BizTalk, SQL and Windows servers.

The company announced its Connected Services Framework in February Bell Canada, BT and Celcom Malaysia also are deploying the platform.

While Microsoft is working with multiple service providers, Shepcaro says AT&T is the only carrier in North America that will sit on Microsoft's CSF board, which will set the direction for Microsoft's CSF product.

Microsoft also is developing a VolP adapter API that will give customers and third parties the ability to build applications for AT&T's network.

AT&T plans to integrate its network-based VolP service called Voice Dynamic Network Application with CSF.■

## Fujitsu enhances SONET platform

#### BY JIM DUFFY

Fujitsu Network Communications last week announced enhancements to its Flashwave 4100 Multi-Service Provisioning Platform designed to improve delivery of data services, including Ethernet-over-SONET.

Fujitsu also announced two OEM deals, including one with edge switch maker and marketing partner Hammerhead Systems.

The enhancements let carriers offer traditional private line, Ethernet augmented with Resilient Packet Ring (RPR) technology, and storage services in a single SONET platform that scales from OC-3 to OC-48, Fujitsu says.

With this release, SONET, RPR, Generic Framing Procedure (GFP), Virtual Concatenation (VCAT) and Link Capacity Adjustment Scheme capabilities have been converged on the Flashwave 4100. This lets users offer carrier-class 10M bit/sec to Gigabit Ethernet Line and LAN services with detailed bandwidth provisioning, statistical multiplexing, class of service and protection switching, Fujitsu says. New Fibre Channel/ Fibre Connection interfaces provide support for storage-area network services for disaster recovery, storage consolidation and

#### It's Hammerhead time

Features of the edge switch Fujitsu will be reselling:

Support for pseudowire and Dry Martini techniques to merger Layer 2/Layer 3 operations.

High-density fan-in of traffic across a range of new and legacy service interfaces, media and speeds.

Grooming and service-level details across a range of applications

Trunking across an ATM and MPLS backbone and control plane.



remote data mirroring.

New OC-n line and service interfaces include support for Small Form-factor Pluggable (SFP) technology, intended to minimize sparing requirements. To increase fiber capacity, the MSPP has Coarse Wavelength Division Multiplexing interface options designed to enable multiple SONET networks to share a single pair of fibers. A new quadport OC-3 service unit and enhanced OC-12 line unit offer increased density, Fujitsu says.

The Flashwave 4100 Large Shelf configuration offers OC-3 to OC-48 line interfaces and 12 service interface slots. The Small Shelf offers six service interface slots. Both versions share all plug-in units and SFPs.

For edge switching, Fujitsu will resell Hammerhead's HSX 6000 switch as the Fujitsu Flashwave 6400 Layer 2.5 aggregation switch. Hammerhead's switches are intended to help service providers man-

See Fujitsu, page 41

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EYE ON THE CARRIER
Johna Till Johnson

If you're like a lot of network executives, you've begun to look seriously at deploying a converged infrastructure. And you're probably aware that successfully deploying convergence means more than rolling out an IP PBX. It requires rethinking not just the phone system but everything from service provider service-level agreements (SLA) to network operations — and even more importantly, assessing the ways that converged applications can help improve the business bottom line.

Here are some best practices and lessons learned from com-

# A few pointers for those moving toward convergence

panies that have successfully deployed convergence — or learned the hard way what doesn't work:

- Review carrier contracts. If you're tied to separate voice and data minimum annual revenue commitments (MARC), moving on-net traffic from your voice to your data network can expose you to unanticipated and expensive contract shortfalls. Make sure you've got enough flexibility to avoid them.
- Double check carrier SLAs. Voice and other real-time converged applications are exceptionally sensitive to latency, jitter and packet loss. Make sure you've got stringent SLAs in place and mechanisms for validating them. Most carriers and many management vendors provide SLA verification tools.

• Budget for management in advance. Converged infrastructure and applications require specialized testing and management throughout the project life cycle, so plan to spend 2% to 5% of the project cost on testing alone.

- Converge staffs. If you haven't already done so, make sure your voice and data teams report to the same person. Provide cross training where appropriate, and make sure teams are clear on their respective responsibilities for service and support. If you're outsourcing support, be clear on what the service organization will and won't do, particularly when it comes to user support. (For example, are user softphones covered?)
- Review physical infrastructure. Issues such as missing inline power or insufficient redundancy can cause unexpected headaches. Make sure routers and switches are inline power-enabled (look for support of the IEEE 802.3af specification) and that critical hardware has appropriate redundancy. Don't forget back-up power supplies.
- Benchmark your voice and data networks before the rollout. For voice networks, pay special attention to mean opinion scores and feature support
   so you can validate the post-

deployment voice performance. For data networks, assess utilization and QoS capabilities. Keep in mind that even though voice calls require relatively little bandwidth, compared with data, overall network utilization does increase. Organizations typically report a 30% increase in overall traffic—but your mileage will vary.

• Don't forget security. Most of the IT executives I work with assume that VoIP security will be handled by the security organization — yet the security folks assume VoIP security is handled by the convergence team. Make sure it's clear whose responsibility converged security is.

But guess what? That's all the easy stuff. The real challenge in ensuring the success of a VolP rollout lies in making sure that the business overall sees a tangible benefit from convergence. While there's no single, one-size-fits all, best practice for making that happen, in upcoming columns we'll examine ways that convergence can help different industries and types of organizations.

Johnson is president and chief research officer at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.

# WilTel storage services focus on disaster recovery

**BY JIM DUFFY** 

CHICAGO — WilTel last week introduced a portfolio of managed wide-area storage extension services for business continuity and disaster recovery.

Announced at Supercomm 2005 in Chicago, the services are based on the carrier's StorageXtend offering, a storage-over-SONET service that comes in 50M bit/sec bandwidth increments. WilTel has expanded this service to include high-end optical, Ethernet and IP options for data retention, backup/recovery, storage consolidation and regulatory compliance.

Lava Trading, a provider of equities and foreign exchange trading services in New York, uses StorageXtend's managed Ethernet WAN option to back up sensitive data by replicating financial transaction records among geographically disperse data centers.

ING Investment Management also uses StorageXtend for business continuity and disaster recovery. ING, which has \$300 billion in assets under management, is using StorageXtend as a replacement bandwidth service for backing up its primary U.S. data center to a geographically remote facility, WilTel says.

StorageXtend bundles Nortel's Optical Metro 3500 SONET platform with WilTel's Protected Private Line service. It supports Generic Framing Procedure and Virtual Concatenation to offer incremental bandwidth options for data, and converges LAN and storage-area network traffic over the same SONET access facility.

StorageXtend supports native Fibre Channel, Fibre Connection and Gigabit Ethernet interfaces. Pricing was unavailable.

Traditionally a carrier's carrier, WilTel began focusing on corporations a year ago. A significant enterprise win for the carrier was a 12-year, \$35 million contract with the U.S. Department of Defense earlier this year.

#### **Fujitsu**

continued from page 39

age the transition of their legacy — but revenue-rich — data services from an ATM core to an MPLS core, and tap an Ethernet opportunity pegged by analysts to approach \$20 billion by 2010.

The switch performs Ethernet aggregation, packet-enabled access and pseudowire termination, and integrates with the SONET/SDH infrastructure using GFP and X.86 techniques. It competes with multiservice edge aggregation features of switches from Lucent and Nortel, and routers from Cisco and Juniper.

Fujitsu says it will also resell BTI Photonics Systems' Netstender platform as the Flashwave 7120 optical extension system. This system transports services over spans that exceed the available fiber capacity or reach of metropolitan optics.

Netstender allows carriers to combine multiplexing, amplification, signal conditioning, optical add/drop and performance monitoring in a system deployed in metropolitan and regional networks.

Flashwave 7120 scales to 23 service slots from multiple shelves, managed as a single network element with a single processor.

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## TECHNOLOGY UPDATE

AN INSIDE LOOK AT TECHNOLOGIES AND STANDARDS

## Multi-core serves up performance

#### BY BEN WILLIAMS

As application performance demands grow, data centers require more computing power in a smaller box so that more servers can fit in a rack. Multi-core processing helps address these needs.

Multi-core refers to a CPU that includes two or more complete execution cores per physical processor. The processors and their caches and cache controllers are combined onto a single integrated circuit. This technology evolution allows for increased performance and higher productivity in computers that can simultaneously run multiple complex applications and complete more tasks in a shorter amount of time. These performance gains are accomplished without increasing power or heat.

#### **Processing power**

In 1965, Gordon Moore predicted that the number of transistors on a chip would double every 18 months. The next 40 years witnessed this assertion become law (Moore's Law), as transistor size decreased and transistor density and computing power increased.

However, the laws of physics restrict Moore's vision. First, transistors slimmer than 16 nanometers cause unpredictable electron transmission, creating a ceiling for transistor size and density on a single core. Second, performance improvements related to innovations in cache, clock speed, memory access and I/O cause undesirable power consumption and heat generation.

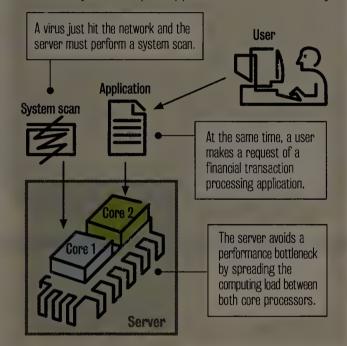
To achieve constantly increasing microprocessor operating frequencies, individual transistors need to switch faster and faster. Continuous enhancements in transistor technology enable this, but the trade-off is the amount of power consumed by each transistor.

To operate at very high speeds, transistors draw power constantly. This is referred to as "leakage" or "static" power. With the highest-frequency microprocessors, static power can become a large percentage of the total power consumption.

Creating further challenge, the increase in static power for

#### How it works: Multi-core processing

Multi-core technology places multiple processors on a single die. By spreading the computing load across two or more processors, servers can seamlessly run complex applications simultaneously.



every extra megahertz of operation is a non-linear function. Where a microprocessor may require 100 watts to run at a certain frequency, to run 10% faster might require 30% or 40% higher power. This creates a problem at the system level where the heat generated by these microprocessors needs to be removed from the box.

There are limitations on how much heat can be removed using traditional fan and heat-sink air-cooled methods. Moving to more exotic system cooling solutions is a significantly more expensive proposition.

Multi-core microprocessors provide an excellent way to

address these issues. The concept is to replicate the microprocessor core and run it at a slightly lower frequency. The net result is almost double the compute power in a given chip at the same power consumption.

The marriage of multi-core processing and x86 64-bit computing represents the next wave in enterprise computing. Performance is maximized by operating systems that can more effectively prioritize and manage multiple application tasks simultaneously — either from many applications or a single application.

Architectural advantages and increased physical resources allow multi-core processors to assign discrete threads (specific applications or operating systems) to distinct cores within the processor, thereby offering greater multi-tasking capabilities to multi-threaded environments. Until recently, higher-end systems and mainframe servers exclusively handled the most demanding applications and workloads, but now the combination of multi-core processing and x86 64-bit computing makes mainframe capabilities available to the masses by drastically lowering the price of performance.

Multi-core processing also bolsters server virtualization efforts. Server virtualization software enables companies to partition, consolidate and manage critical computing infrastructures. Multi-core processors offer an efficient hardware platform for handling the demands of several virtual machines running on one physical server. These technologies can combine to improve ROI and reduce total cost of ownership.

IT managers are starved for more powerful computing and multi-tasking as their demands, data and services grow while their IT budgets shrink. Multi-core innovation begins the age when corporations can feasibly achieve mainframe-class performance on mainstream platforms — without the mainframe price tag.

Williams is vice president for the commercial business microprocessor solutions sector for Advanced Micro Devices. He can be reached at ben.williams@amd.com.

#### ASK Dr. Internet By Steve Blass

I live in an apartment with two other people, and we want to network our computers together for the purpose of file sharing. We want the option of adding computers (notebooks) on the network wirelessly, so at any given time there will be between three and five computers on the network. Because our DSL modem is already wireless, we have wireless access, but we want a file-sharing network. Can we do this without a router, or do I need to buy one? If I buy a wireless router, will it

#### conflict with my wireless DSL modem?

You may be able to share files by simply turning on File and Printer sharing on your notebooks, and then using the wireless LAN connectivity the DSL modem provides to connect to each other. Sharing files in workgroup mode requires that each computer have a local account for each user who will connect. If you take this approach, you can toggle the Windows firewall settings to block file sharing when you are not using it. A router could provide an additional security boundary between

your apartment and the Internet but might not be required. If you add a wireless router to the network, you will need to configure the router and the DSL modem wireless access point to communicate with each other.

Blass is a network architect at Change@Work in Houston. Got a question about networking, the Internet or any other high-tech conundrum? Some configuration got you stuck? The doctor can help you. Send questions to dr.internet@changeatwork.com.



GEARHEAD INSIDE THE NETWORK MACHINE

Mark Gibbs

## High availability and heartbeat

We mentioned Heartbeat a couple of columns ago when we started on Linux Enterprise Clusters (www.net workworld.com, DocFinder: 7536), so let's dig deeper.

Heartbeat is a subsystem that allows a primary and a back-up Linux server to determine if the other is "alive" and if the primary isn't, fail over resources to the back-up. Heartbeat uses inter-server signaling called "heartbeats" over serial, User Datagram Protocol and

PPP/UDP connections, and handles the process of the transfer of the server's IP addresses.

Heartbeat (DocFinder: 7537) arose from the Heart project in 1999 and is one of the foundational technologies of the High Availability Linux Project.

Now, as simple as failover might sound, we're talking computers and networking and so, of course, it isn't. In fact, the problem is so complex that the current release only supports a pair of nodes. This will change with the forthcoming release of HA Linux Release 2 (HAL-R2) within the next couple of months.

HAL-R2 will be a major revision of the entire Linux system. HAL-R2 will extend Heartbeat's functionality to support multiple nodes, the ability to monitor resources for correct operation, and support for configuration dependencies (DocFinder: 7540).

Being able to support multiple nodes in a cluster is crucial, as is monitoring. Resource monitoring ensures that the failure of a service provided by a node can be detected even without the node actually "dying."

Dependencies, otherwise called "constraints" (Doc-Finder: 7541) are important, as you might never want database servers to run on the same node as Web servers, or you might want to always have data replication services

## Heartbeat . . . is a stable and effective way of ensuring that two nodes in a cluster act in a coordinated manner.

run only on nodes that are running the database services.

The version of Heartbeat available today is a stable and effective way of ensuring that two nodes in a cluster act in a coordinated manner. Each server runs the Heartbeat daemon and exchange messages called Heartbeats that inform the other machine that the sender is alive.

In the event of the primary node failing, the back-up node Heartbeat is responsible for transferring any IP addresses that must be available after failover.

A highly reliable communications channel is required to avoid the split-brain, or (less sexily) the partitioned, cluster problem. In a split-brain situation both servers are alive and functioning, but both also believe the other is dead

because the Heartbeats can no longer be seen. You now have the problem of both servers trying to provide the same services and use the same IP address for crucial client services. Even worse is when both servers share disk resources and compete for access to the same data at the same time.

The solution for this problem is a component of Heartbeat referred to rather eccentrically as "Shoot The Other Node In The Head," otherwise called Stonith.

Stonith uses a controllable power control device such as the Western Telematic network power switch we discussed ages ago (see DocFinder: 7542).

The simplest and least conventional configuration, as discussed by Karl Kopper in his book *The Linux Enterprise Cluster*, would be to have the power control device controlled by the back-up server. This only allows for one-way and one-time failure, and requires operator intervention to reset the back-up server when the primary is restored.

Heartbeat and Stonith are the foundations for a Linux Enterprise Cluster, and while building such a beast is definitely not simple, the "bang for the buck" is undeniable.

If you are nervous about building your own High Availability Linux Enterprise Cluster, you can purchase commercial implementations based on HA Linux; see the HA Linux Commercial High-Availability Software for Linux page (DocFinder: 7543).

We're highly available at gearhead@gibbs.com as is Gearblog (www.networkworld.com/weblogs/gearblog/).



### **CoolTools**

Quick takes on high-tech toys. Keith Shaw

#### Seagate offers flood of new hard drives

In its major product launch of the year, Seagate last week unveiled 10 new hard drive products, including

three new Seagate-branded storage devices for end users.

The company plans to ship a 500G-byte external device that uses a 3.5-inch hard drive and has a FireWire 800 interface option; a 2.5-inch portable external hard drive that offers up to 120G bytes of capacity and offers USB and FireWire support; and a CompactFlash Photo Hard Drive that offers either 4G or 8G bytes of capacity in a 1-inch Compact Flash II form.

The 2.5-inch drive and CompactFlash card are expected in the third quarter, and the 3.5-inch external drive is expected to ship in the fourth quarter. More details on Seagate's other announcements are available at www.networkworld.com, DocFinder: 7544.

vibration or moisture damage. For an extra \$5, users can buy the Rocket Dock-lt desktop cradle.

#### TVs and displays become IP addressable

At last week's InfoComm 2005 show, Sampo Professional showed off a series of LCD TVs and plasma displays that can be given an IP address, letting users remotely control the displays through a current wired or wireless network infrastructure.

A display with an IP address gives companies the chance to control functions such as power on/off, picture-in-picture, picture-over-picture and screen and sound adjustments from anywhere in the world (through a Web browser interface). Sampo said that emerging video applications, such as video on demand, emergency and security alerts, distance learning, and video conferencing, benefit from displays that have an IP address.

The displays with this ability from Sampo include the 26-inch (LME-26X8,\$1,500); a 32-inch (LME-32X8,\$2,000); 42-inch (LME-42X8,\$4,000) LCD models; and a 50-inch plasma display (PME-50X7, \$4,500). They are available through resellers or at www.sampoamericas.com.



Seagate's 3.5-inch external hard drive will pack 500G bytes of capacity.

#### Run apps directly from keychain drive

Memina's new 2G-byte Pocket Rocket USB Flash drive lets users run applications or play music and video files directly off the device instead of having to transfer them to a PC first. The drive costs \$199.99 from online resellers and at the Memina Web site.

Memina, a spin-off of Samsung Electronics, says the Pocket Rocket offers 18M byte/sec reading speed and 15M byte/sec writing speeds, enabling the ability to run applications, music or video off the drive directly. The device also features a gold tip and attached, rotating cap that protects it from dust,

#### Who needs a hard drive for music?

Lexar Media is offering the LDP-200, a digital music player that doesn't have any internal storage — it relies on the Secure Digital card reader and assumes that if users want more songs, they'll just buy another SD card.

The device costs \$50 without a card (bundles with 256M-, 512M- and 1G-byte cards cost \$90,\$120 and \$170, respectively) and doubles as an SD card reader for a computer, Lexar says. The music player supports MP3 and Windows Media Audio file formats, and supports Microsoft's digital rights management technology. Go to the Lexar Web site for more details.

Shaw can be reached at kshaw@nww.com.







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On Technology John Dix

## New look, same old commitment

ou hold in your hands a copy of the freshly redesigned *Network World*, which represents the final change in a broader effort that has been rolling out in stages across print and online.

In its 19-year history, *Network World* has stayed true to its mission: synthesizing industry developments so enterprise network buyers can make informed strategic decisions.

While technologies come and go, we focus on the constants, delivering detailed information about products and services, opinion about how to apply technology to advance business needs, career/management advice, and information about technology advances. *Network World's* print, online and face-to-face events are crafted with these needs in mind.

Since we launched *Network World* in 1986 we have updated the design five times, each one a refinement intended to make the publication more appealing, easier to browse and more useful. Some of the thinking that went into this latest design tweak, for example, saw the recent addition of the Enterprise Computing section to provide a focal point for coverage of system news and advances. And, of course, we hope you agree that the new look is bolder and cleaner.

The new design actually debuted online first. In May we rechristened our site NetworkWorld.com to make it easier for people who weren't familiar with our old handle, nwfusion. com, and revamped the site from top to bottom. The principal design goals were to ease site navigation and surround stories with even more contextually relevant material so visitors could dive deeper with little extra effort.

As in print, we organize online content in buckets to save readers time. The top-level view is provided by 12 Research Centers focused on things such as security and convergence. Each Research Center is further subdivided to deliver news, test results, expert advice, case studies and white papers.

Networking today is as vibrant as it was when we launched the publication 19 years ago, if not more central to everything. Most all of today's hottest issues are network related, from security to convergence, wireless, storage-area networks, utility/grid computing and service-oriented architectures (SOA). Despite some execution problems, Sun basically had it right all those years ago when it argued that the network was the computer.

There is more work to do before we can realize the grand computing visions we have been exploring in our supplement series, The New Data Center. But when you combine a grid-powered service-oriented hardware architecture with an SOA software environment, the future looks bright.

We're working hard to help you add it all up. Feel free to make suggestions. All input and feedback is welcome.

— John Dix Editor in chief jdix@nww.com

# Opinions

#### The pitfalls of IPv6

In the story, "IPv6 addresses demand for space" (www.networkworld.com, DocFinder: 7522), Lumeta's Karl Siil states, "IP address space is becoming scarce under IPv4." I still haven't seen any concrete examples of this. With private IP address space available, there should never be any reason to run out of IPv4. Cable companies and universities would just need to go to the 10.0.0.0 addresses (or some such) and give up their notion of having to own Class A blocks. No internal network should be on public address space anyway, just DMZ computers and network address translation IP addresses. Same reasoning with home appliances — they should never be exposed to the Internet except through some kind of firewall/NAT router.

The story says, "IPv6 is a direct plug-and-play replacement for IPv4. All major operating system and network hardware vendors support IPv6." If your definition of "major operating system" is a new IBM PC or Mac OS/X and new network equipment, then this is correct. If you plan on implementing IPv6 on older computing equipment, you should expect a significant CPU hit. Also, any "odd" equipment (controllers, in-house projects and so on) will require a complete rework. IPv4-to-IPv6 conversion is not simple.

Ken Hollis Tulsa,Okla.

#### **Understanding complexity**

Regarding Mark Gibbs' BackSpin column, "Shattered Mac illusions" (DocFinder: 7523): Like Gibbs, I wonder about the same complexity issue. I have a Mac, which I dearly love, and I've run and administered MS-DOS, Windows 95, NT, 2000, ME and XP systems, and SGI IRIX on 64-bit chips. Everything is brittle, by which I mean once you venture beyond an invisible line in some programmer's imagination, it breaks—frustratingly, infuriatingly or annoyingly, but seldom

catastrophically — and never with an explanation. I used to think, and still want to believe, that OSS holds the promise of fixing this, if a mechanism can be implemented to give quality feedback to developers about how a product is actually used and where failure occurs. The problem is an inherent inability to correctly model and understand complexity.

Denis Smith Production manager Showbran Graphics New York

#### **Discover OpenLDAP**

Your story on open source directory software (Doc-Finder: 7524) contains much of the same misinformation often touted about OpenLDAP. This misinformation is largely the result of RedHat's refusal to upgrade its version of OpenLDAP for years. If people actually used the modern version of OpenLDAP (2.1 and higher), they would discover several things:

OpenLDAP outperforms Netscape Directory Server (DocFinder: 7525).

OpenLDAP scales better than Netscape DS.
OpenLDAP is more stable than Netscape DS.

OpenLDAP (with 2.3) will have nearly every feature Netscape DS ever had (just missing multi-master replication) and many features that Netscape lacks.

I've run the enterprise directory service at Stanford for more than five years. It started out as Netscape DS. We moved to OpenLDAP a few years ago, and I would never go back to Netscape DS, which was unreliable and couldn't scale to our needs. OpenLDAP not only meets but also vastly surpasses all our requirements.

Quanah Gibson-Mount Principal software developer ITSS/Shared Services Stanford University Stanford, Calif.

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.





THROUGH CHANNELS
Ken Presti

## **Channel programs' Seven Deadly Sins**

s an analyst and consultant, I get a great view of how network vendors direct, and often misdirect, their channel programs. Nothing can take the wind out of a good technology's sails — or limit the customers' ability to leverage that technology — like a poorly planned or executed channel program. Here are some common mistakes:

Pinball pricing. Avoid the temptation to swing prices up and down to meet the needs of a particular deal. To sell products proactively, the channel needs to know that the numbers will be in place longer than a Keno drawing.

Faulty operations. Key operations such as order acceptance, shipping, forecasting, manufacturing and return-merchandise authorization processing need to run smoothly. If a marketing communications kit is promised, it should be delivered.

Over-reliance on direct sales. Many vendors must rely on their own sales force until the product catches on and the channel sees value and can take the volume higher. By this point, the direct sales force often has become someone's fiefdom. If this person feels threatened, he may not admit he's strung barbed wire around the perimeter, but that stinging sensation is a clue. This

problem often translates to reserving all the best accounts for the direct sales force or paying direct reps less money when the channel is engaged.

Patterning too closely after dominant vendors. "If Cisco does it, shouldn't we?" Not necessarily. You're probably trying to expand your number of channel partners. But Cisco is not. Different circumstances mandate different strategies.

Nothing can take the wind out of a good technology's sails . . . like a poorly planned or executed channel program.

Not balancing regional and worldwide strategies. Many companies want to build worldwide market share. Yet it's hard to centralize all processes and build a program that makes sense for all geographies and all cultures. Regional considerations must be made.

Go sell it; we'll wait here. Reaching deals with distributors and value-added resellers (VAR)/inte-

grators is much closer to the beginning of the process than the end. Vendors continually must work with channel partners to build sales strategy and maintain partner mindshare in a highly competitive environment, even after the initial deal is done. The problem is most common at small engineering-focused companies, where channel marketing budgets are expected to quietly evaporate.

I love my product and assume you do, too. This one is for those Little League parents who can't understand why Junior is not automatically in the lineup. Don't worry, Coach; they're like this at work, too. Just like Junior, the products have to earn partner confidence because, until then, not much is going to happen. Distributors, resellers and VARs have many companies vying for their attention, and adding new products is inherently costly. The vendor's clout in channel relationships corresponds to end-user demand, market share and partners' ability to generate a profit. Until these three attributes are clearly in place, the vendor is just another player vying for a spot on the roster.

Presti is research director of IDC's Network Channels and Alliances service. He can be reached at kpresti@idc.com.



INDUSTRY COMMENTARY Frank Dzubeck

## Net intelligence a balancing act

hen IP was in its infancy, network concerns were focused at Layers 2 (data link) and 3 (network) of the Open System Interconnection (OSI) model. As time went on, enhancements continued to these layers, and then the network industry ventured into Layer 4 (transport) for load balancing, Layer 5 (session) for VolP QoS and Layer 6 (presentation) for encryption and/or acceleration. We now have reached Layer 7 (application). By definition, this layer was intended to provide network support services for application and end-user processes — addresses and QoS are identified; authentication, constraints and privacy security issues are addressed; network services for file transfers, e-mail and so on are invoked.

Now we've reached the point where network intelligence is pervasive across all layers of the OSI model. The IT industry has not been stagnant during this time frame and has moved forward into its own world of applications and end-user services as embodied in a service-oriented architecture (SOA). The SOA establishes a set of standards-based higher layers for IT services that apply equally to servers, storage and networks. In theory, the SOA creates layers on top of and interfacing with specific OSI services that exist within the network infrastructure. In practice, network service domains blur with IT domains, both lack inter-layer coordination and, in the eyes of some network vendors, actually can subsume or override the service layers of an IT architecture. This belief can become a major issue when the term "application aware" is taken to an extreme.

No one disputes that corporate networks must have the intelligence to be applications aware. What to do within the network using this applications knowledge is the issue. Deep packet-inspection techniques allow network components to know the resource destination, priority, QoS levels, data type, IT application, transaction type and content of a session flow, message or packet. What is not known is the transmission intent of the application. If the network attempts to reject, redirect or alter the message content, security status

#### Communications networking is at a critical juncture in its evolutionary cycle.

or service level, application QoS optimization and business process integrity might be compromised or lost

Examples of the network intelligence problem abound. One obvious problem is transaction flow. Transactions are the bread and butter of the corporate IT world. The underpinning of transaction processing is the concept of workflow. Transactional workflow is predetermined and dependent upon the application usage in the corporate business process. The network cannot interfere in the IT orchestrated workflow without affecting the business process service-level requirements of the application. The next generation of IT transaction technology will be based upon grid services

(for example, Globus 4.0) and will, by IT industry intent, become Web services, allowing the creation of dynamic transaction workflows. The intelligent network cannot independently optimize this real-time environment without intimate direction from the application.

The next problem area is virtualization. It is becoming an IT practice to virtualize compute and storage data center and distributed resources. The tools and products exist today to implement these IT technologies in a corporate environment. Although similar virtualization products exist for a network, their implementation is the exception rather than the rule. Without application awareness and IT control, network virtualization can override IT attempts to virtualize compute and storage resources.

Communications networking is at a critical juncture in its evolutionary cycle. Corporate decisions will need to be made as to where and in what form network intelligence will exist.

Too much independent network intelligence can create disaster unless it is dictatorially controlled and managed by IT SOA application processes. Too little independent network intelligence will negatively affect the successful implementation of a corporate business process-driven SOA.

Dzubeck is president of Communications Network Architects, an industry analysis firm in Washington, D.C. He can be reached at fdzubeck@commnetarch.com.

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Winn Schwartau's column, "Mad as hell, switching to Mac" (www.networkworld.com, DocFinder: 7526) provoked an avalanche of feedback from readers on both sides of the issue. Here's what some wrote:

#### Mac attack

same story all over again. It's not the operating system that needs to change; it's the users who cause most of the problems: I have been an avid computer user for 15 years now, both PC and Mac, and I don't have all the security apps installed that everyone says you should have. I follow the simple principle of "if you don't know what it does, delete it or don't use it." I never get viruses, nor have I ever been hacked. I do have a hardware firewall, but that is it. The world needs a massive lesson in proper computer usage.

Jason Gregory
IT manager
Leasecor Equipment Finance
Burlington, Ontario

Schwartau should try Linux. I run Linux at home and on my laptop, and I have all the functionality and stability I need — for free or at a fraction of the cost of switching to Mac. I have run Linux on Intel, Sun and DEC Alpha hardware, and there are also distributions that run on Apple hardware. I admit Linux isn't as polished as the Apple operating system, but it sure beats Windows when it comes to stability and security.

Burton Wise Euless, Texas

I too finally converted to Mac, which I blogged about in my SecurityChief column at *Network Life* (DocFinder: 7527). It changed my daughter's life — she hated the slow-moving Windows XP so much that she didn't touch it, but she loves the Mac and is now a great page designer on the Mac. Not only that, I convinced my sister to get Macs for her family for Christmas, and she's gone from technophobe to Web-page, garage-band-producing nerd. She even carries her Mac portable with her to her job every day — and she's a hair stylist!

I am convinced that Mac is by far a safer machine to use than my XP, which I keep around mostly as a test box now. It's particularly trouble free in terms of security administration. But what I don't like is lack of control over my update process (Mac doesn't tell me what the security updates are for). And I don't like that there's no tool to scan my machine for spyware.

Everyone says there is no spyware for the Mac, but I don't fully believe that. Ten years of writing about computer crime and security has taught me that if I can conceive it, it can be done and maybe already is being done. As Mac adoption spreads (and it will), attackers will turn their tools to the Mac.

So how about it, developers? Can you build us a tool to search and destroy spyware on a Mac?

I've been a Mac user for quite some time, but also am the computer tech for a small, Windows-only real estate company. I've been wanting to switch over the office computers to Mac but am forced to stay with Windows because of the Windows-only real estate software. All computers, Macs and PCs, have their problems. The Mac platform has numerous advantages over the PC platform, but at work I've been unable to overcome the software availability issue.

Lanny Walker
Associate broker
Coldwell Banker C Dakota Realty
Vermillion, S.D.

I feel Schwartau exaggerates Windows' weaknesses. Yes, it is less secure than Mac, but it's a bigger target. I have been using Windows since before NT, and I have had only a handful of security issues. Plus, when you need your computer to do something more than the mundane, Windows is a great world to be in. For every malicious coder trying to harm your Windows experience, there are many fantastic developers that write great tools and very reliable software.

Andrew Weidenhammer

New York

People want different machines to do different things. The Mac mini is good enough for folks who just want to check e-mail. Otherwise, Macs are expensive. The whole idea of one company running basic hardware and software is here today with Apple and its new mini.

Anyone who wants something specialized can find it in the PC market, usually cheap. This is because of massive competition. And the problem isn't Wintel; it's Windows. Linux, BSD and friends run just fine on Intel boxes. Computers are complex things. Not everyone wants to turn them into a household appliance. I find a good fit between my Linux boxes at work and my Windows machine at home, even if it mean a reinstall every two years...

> Jacob Yalcin New York

Windows is a classic case of "inverted pyramid" software, a fairly typical problem for old software. It starts out simple and is reasonably reliable. But over time, bits are added that were not anticipated in the original design. Compromises and dubious design decisions are made. The result is that the package loses its stability and the most unlikely event can tip it over.

What is needed is a rewrite for the IT environment of the 21st century. Or perhaps Bill Gates should buy Apple?

Charles Swindells Johannesburg, South Africa

I've followed a slightly different path than Schwartau but ended at the same place: I have a new Mac PowerBook that I use for my development work.

I've tried to use Windows XP and had far too many problems with software and security. I became tired of fixing the computer and guarding against viruses.

Later, I switched to Linux. I've used it for more than seven years. However, it doesn't work that well with new hardware and I've found myself having to wait or run endless compiles and installs of new software, fixes and support modules. While the advantages were many, I was spending a great deal of time on updates.

My little Mac seems to be the best of both: Unix security and simplicity and the ability to run applications and use hardware that is common and mainstream.

Charles Gentry London

I have to agree with Schwartau. Reinstalling Windows (and all those updates and patches) is not the solution — it is the problem.

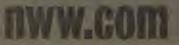
Also, installing a third-party application should not destroy the operating system. I have no idea which program was installed but now I constantly get "Explorer.exe has caused a problem and will be closed by Windows." Then, the screen reloads and Explorer takes up 80% to 100% of CPU, forcing a reboot. Nice feature.

I went with Linux and what a way to go! It's wonderful.All the open source programs allowed me not to spend money on most other programs. Open source gave me Office tools, graphics tools and multimedia tools.

Windows became too painful and expensive to operate I run my own business and we couldn't afford Microsoft anymore. Sure, we used it a lot and when it worked, it worked great, but when buried problems surfaced, they wouldn't go away. If we reloaded Windows and all the apps, the problems always returned and we never figured them out. Touching any XML file caused Explorer to crash. With apps going to XML format, this problem was too severe.

Linux doesn't have those problems. Neither does Mac. Because Microsoft wouldn't support us, we had to leave their world.

Bill Catz El Segundo, Calif.



But wait, there's more

Follow along with our online forum between Schwartau and readers. DocFinder: 7529





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#### TECHNOLOGY INSIDER

## VOICE OVER IP

A behind-the-scenes look at new apps under development in the vendor test labs.

## Inside telephony of the future

BY TIM GREENE

What if your phone

could learn over time which calls to put through to you and which ones to hold? What if you

could set up a

bunch of alwayson phone connec-

tions and talk to key people when-

re-dial? These fea-

tures and others are being devel-

oped inside the

vendor VolP labs.

ever you want without having to

oIP can save money (maybe), simplify network administration (maybe) and improve productivity (maybe), but let's face it, a major reason people are interested is that VoIP has the potential to do some really cool stuff.

Like figuring out where you are, how you are accessible and whether the caller is important enough to interrupt you.

Like determining whether you are who you say you are before granting you natural-speech access to data such as your bank account information.

Like giving you intercom-like connections to just about everybody so when you want to reach someone, you just start talking. These are just some of the new features being developed in VoIP labs. Just wait awhile and your

vendors and service providers will be offering them.

Nortel builds caller-ID bot

Nortel is creating a trainable system that over time learns more about how end users want to handle calls, according to Phil Edholm, CTO and chief architect, enterprise networks at Nortel.

Today, you can use caller ID to determine who is calling and whether you want to answer the phone, but that requires stopping what you are doing, looking at the phone and then picking it up or not. What if the phone network could act like a well-informed administrative assistant and intelligently decide for you what to do with a call? Using Session Initiation Protocol (SIP) and a server-based user software agent, Nortel is working on just that.

If a user is listed on a SIP presence server as available at a certain phone number and gets a call from a customer who represents a \$1 million account, the call agent would put that call through. If, however, the agent determines the call is from an annoying router salesman, it can be dropped to voice mail.

After handling the call, the software agent queries the user to find out if it acted properly. It might ask the user to rank the importance of the caller, whether the call should have been put through, whether time of day was a factor, or whether the user's activity at the time was a factor.

"You get an IM from your personal agent, and it asks you to classify the individual so it can understand where you lump that person and then how the call was handled," Edholm says. "It builds a database of how you thought the agent handled the caller at different times and with different types of device availability."

Based on these questions and answers, the agent develops its skill for screening calls for a particular user. "If you had a secretary, and she forwarded a call to you without asking, and you hung up and said, 'If that guy calls back in the future, query me before you send him in,' — that's a similar feedback mechanism," he says.

Some work still needs to be done to improve the agent's learning curve and streamline the user interface, but this feature should be available in 2006 or 2007, Edholm says.

Go online for more VolP test results. www.network world.com, DocFinder: 7534 are before granting you natural-special bout everybody so when you want to beloped in VolP labs. Just wait awhile a selection of the bound of the bo

See VolP, page 5



"At Nissan, we expect to save at least \$135 million annually thanks to the efficiencies that Windows Server 2003 and Exchange Server 2003 are helping us achieve."

**Toshihiko Suda** Senior Manager, *Nissan Motor Company, Ltd.* 

#### Make a name for yourself with Windows Server System.

An upgrade to Microsoft Windows Server System made it possible for 50,000 worldwide employees at Nissan Motor Company to have more secure remote access to their e-mail and calendars from any Internet connection, without the hassle and expense of a VPN. Here's how: By deploying Windows Server 2003 and Exchange 2003, not only did Nissan IT meet the CEO's demand for better global collaboration, they expect to save at least \$135 million by streamlining their messaging infrastructure. To get the full Nissan story or find a Microsoft Certified Partner, go to microsoft.com/wssystem



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|----------------------------|----------------------------------|--|
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| Data Management & Analysis | SQL Server™                      |  |
| Communications             | Exchange Server                  |  |
| Portals & Collaboration    | Office SharePoint* Portal Server |  |
| Integration                | BizTalk® Server                  |  |
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#### TECHNOLOGY INSIDER VOICE OVER IP

#### VoiP

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#### **AT&T** is testing voice biometrics

AT&T is working on network VoIP smarts that can listen to callers and answer their questions without human intervention. Called multimodal, natural-language customer care, the system includes some current technology and some new developments, says Behzad Nadji, vice president of AT&T research and architecture.

If a user needs bank account information, he could go to a Web site, click to log on and set up a VoIP call. "It allows you to log in by speaking your name and PIN number and uses the spoken word to verify your PIN number, and it has a signature of your voice. It uses biometric technology to verify you are who you say you are," Nadji says.

Rather than answer a series of yes-and-no questions as interactive voice response systems do today, users state their problem in conversational speech. The system's VoiceTone speech engine converts what is said to text, analyzes it and fishes the answer to the question out of available databases. It converts the text from the database into a spoken answer using AT&T's Natural Voices software. "When you hear these engines you don't feel as if it's a robot on the other end," Nadji says. "It's pretty natural." It also has a 220,000-word vocabulary, about four times the vocabulary of the average adult.

VoIP helps integrate voice with data because they share a common packet infrastructure, which also opens the possibility of leaving multiple calls open all the time, Edholm says. In a circuit-switched network, a person makes a call, a circuit is created then torn down when the parties hang up. With VoIP, no packets are passed across the network when no one is talking, so connections could be kept open using low-bandwidth keep-alive packets until the connection is needed.

"You don't have to go through the call setup and tear down. By clicking on a connection and opening that voice path you can open up an existing connection. You can have lots of intercoms," Edholm says. So an administrative assistant for a department could work from home but still be available to respond to spontaneous voice questions. "It's a lot like having your admin sitting outside your door and saying, 'Hey Brenda, can you check something for me?" he says.

Of course, it's possible that several people might want to talk at once, he says, but Nortel is working on that, too. One possible solution is a dashboard that alerts recipients that someone else is trying to get through, and an automated response back to the talker saying, "hang on a second, they're already talking to somebody else."

With these types of applications and call features being written for SIP-based networks relatively quickly, VoIP could crumble under the weight of the sheer number of them if there is no way to make sure they don't interfere with each other. For example, a conferencing feature could automatically call a participant at 2 p.m., but the participant isn't at the phone and has activated call forwarding that will try several other numbers.

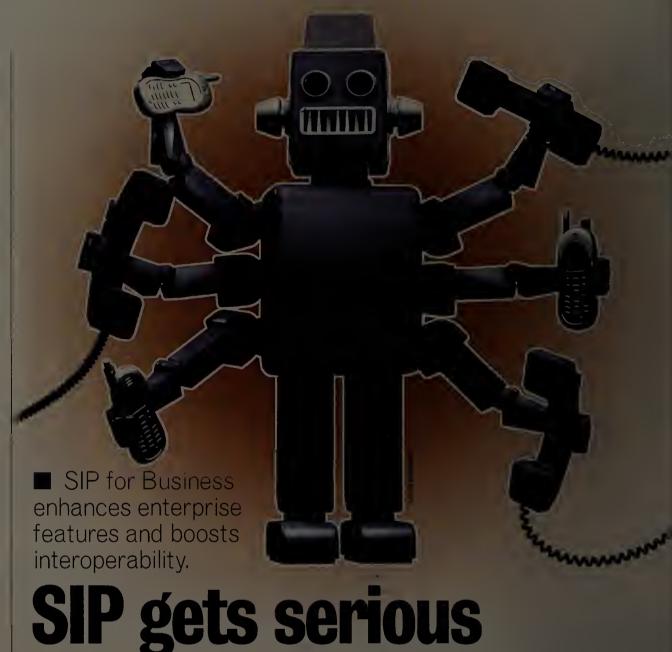
When the conference server calls and the find-me feature answers, the conferencing server asks for the participant's PIN. The find-me feature doesn't respond. It is looking for the participant. When it finally finds him and he connects to the conferencing server, it is waiting for the PIN. The participant doesn't know this, hears nothing and hangs up.

AT&T is offering testing technology called distributed feature composition that would let applications explain themselves to each other so they don't trip over each other causing negative interactions, Nadji says, eliminating potential management nightmares as cool new applications proliferate.



Your personal call agent "builds a database of how you thought the agent handled the caller."

Phil Edholm, CTO and chief architect, enterprise networks at Nortel.



BY PHIL HOCHMUTH

or John Haltom, network director for Erlanger Health systems, communications software based on Session Initiation Protocol is literally a lifesaver.

Erlanger, a large Tennessee hospital management group, is developing software that will soon let nurses receive SIP-based instant messages from machines such as IV pumps, heart monitors or other medical devices. Erlanger uses SIP-based servers, handsets and software from Nortel, Research in Motion (RIM) and Microsoft.

But with all of SIP's promise, one problem has been a killer for Haltom's IT staff.

"Everyone has their own interpretation of the standard," Haltom says. "And technically, they all adhere to the standard, but in a way that is just different enough so that different vendors' products can't talk to each other."

The cure for this, some vendors and industry observers say, might be SIP for Business (SIP-B). While not an IETF standard, SIP-B is a multi-vendor effort to outline a set of advanced features for business telephony networks. Because vendors could deploy features that are similar in different ways, as defined by the IETF standard, SIP-B would spell out specifics on how advanced SIP-based features —

multi-line appearances, conference call bridging — would work across multi-vendor products.

The calling features, such as hold, transfer and multiple-line appearances, are based on standard IETF-defined call flows — collections of complex back-and-forth handshakes and acknowledgement messages between SIP servers and endpoints. Proponents of SIP-B say that the 40 or so call flows outlined by the IETF are not enough to satisfy customers used to the more than 800 features on old IP PBX systems.

"We tend to get carried away by the latest and greatest technology," says John Weald, CTO of Sylantro Systems, a maker of SIP-based IP gear for carriers. "But sometimes we don't think about the small business around the corner with an old key phone system. If SIP products can't do the features in those old Toshiba or Nortel systems, then SIP-based IP PBXs or hosted services won't be competitive there."

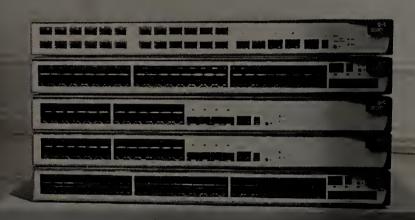
Sylantro is one of the main vendors behind SIP-B, along with partners Siemens, Polycom and Citel,

See SIP, page 60









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#### TECHNOLOGY INSIDER VOICE OVER IP

#### SIP

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and several others. These firms have agreed upon a set of 18 additional SIP features that IP phones must support, including old PBX features such as call park, multi-line appearances on phones, distinctive phone rings, and advanced conferencing and bridging features.

Some yendors, such as Avaya, Siemens and Nortel, use a mix of SIP and proprietary extensions to mimic these PBX features. "We have to guard against putting in too many proprietary solutions just to meet market demand, because that defeats the purpose of SIP," says Scott Augerson, director of SIP business development for Siemens.

#### **SIP-B** skeptics

Others in the industry are more skeptical of the SIP-B effort, saying that SIP already meets most business feature requirements.

"For most of the call flows outlined in SIP-B ... we do that already," says Scott Wharton, vice president of marketing for BroadSoft, a SIP softswitch maker that competes with Sylantro and Siemens. He says the idea behind SIP-B is a non-issue in the industry, and adds that the IETF's definition of SIP offers more than enough capabilities for business phones.

"This idea that SIP is not ready and not able to be sup-

ported is a myth," he says. He adds that vendors such as Siemens, Avaya, Cisco and Nortel don't want commoditization of IP phones through the broader adoption of standards

"The reason they have not implemented SIP is because they make a lot of money on their existing phone sets,"Wharton says.

#### Talking the talk

Erlanger's Haltom isn't interested in all the vendor wrangling. He just wants to get simple third-party SIPbased IP phones to work on a network with mixed SIP and proprietary. "There are lots of companies with SIPbased phones that are supposed to just be plug and play but they just won't talk," he says.

As for the state of SIP-B, Sylantro's

Weald says the RFC Sylantro submitted to the lETF has since expired. But his firm and other SIP-B supporters are looking to still promote the idea of SIP-B through the SIP Forum, a multi-vendor consortium for promoting the development and adoption of SIP software and hardware.

"Everyone has their own interpretation of the standard."

John Haltom, network director for Erlanger Health systems

"There is still strong support among our group [of SIP-B proponents] and the SIP Forum looks to be the best place to promote this, as opposed to the IETF," Weald says.

Whether more vendors latch on to the idea of SIP-B through the SIP Forum remains to be seen. One vendor of SIPbased enterprise IP PBX gear, Zultys, is moving toward SIP-B compliance. This is being spurred by the convergence of carrier-based VoIP services with enterprise-focused IP PBX and phone gear, says Patrick Ferriter, Zultys' marketing vice president.

He says Zultys is beginning to sell its SIP-based IP PBXs with SIP services from carriers that use Sylantro and BroadSoft equipment.

Ferriter likens the state of SIP to the early days of ISDN. "Back many years ago, you had one standard for ISDN, but

a bunch of different variants for depending on what region you were in," he says.

"With the IETF's definition of SIP, you do have a very solid base," Ferriter says. He anticipates more vendor cooperation on SIP, with elements of SIP-B, over time.

#### CLEAR CHOICE UNIFIED MESSAGING

■ Avaya tops slate with advanced voice-recognition and text-to-speech wares.

## VolP vendors get both messages

BY EDWIN MIER, ROBERT TARPLEY AND DAVID MIER, NETWORK WORLD LAB ALLIANCE

nified messaging isn't a new concept, but IP telephony vendors are spicing up their unified messaging offers with advanced user interfaces and more accurate voice recognition and text-to-speech technologies.

In typical installations, the unified messaging system is a software add-on to a PBX system that works with it to provide efficient, consolidated, "hands-free" access to voice mail and e-mail via any phone device, located anywhere. In most cases, the unified messaging system handles the voice mail directly from the PBX and provides the processing necessary to integrate the voice mail and e-mail via a LAN connection to the e-mail server.

In this Clear Choice Test we evaluated the latest unified messaging packages from IP telephony vendors Avaya, Cisco, Nortel and Siemens Communications. A subsequent test is planned of stand-alone and third-party unified messaging offerings.

Avaya topped the competition because of its well-done Web interface to unified e-mail and voice mail, superior voice-recognition interface, and outstanding TTS accuracy and performance.

Siemens placed second, with its major strengths being exceptional administrative access to the unified messaging environment, a very good Web interface to unified e-mail and voice mail, and tailorable voice recognition options.

Cisco boasts exceptional survivability options and added voice mail security. There were some missing pieces, though, such as no Web interface to unified voice mail and e-mail, and no voice-recognition access to e-mail.

Nortel's strengths included broad language support and tailorable voice recognition. Architecturally its unified messaging only works with Nortel PBXs. Nortel's TTS readout (what you hear as the unified messaging system is reading your e-mail to you) was poor, comparatively speaking, and a proprietary voice mail-encoding format complicates matters by requiring that a Nortel-specific player be installed on your laptop to play the message.

All packages tested comprised one or more servers, client software and the underlying telephony infrastructure to fully exercise the unified messaging features specified in our test plans (see "How we did it," www.networkworld.com, DocFinder: 7528).

For consistency, we standardized on Microsoft's Exchange e-mail message store and the Outlook e-mail client. Each vendor provided an Exchange server (2000 or 2003) and any necessary Outlook client plug-ins.

We found that, for the four products we tested, an estimated 80% of the e-mail/in-box-based unified messaging features and user interface are effectively the same. The real action lies in new unified messaging interfaces, which promise simpler access and greater user productivity. Our test focused on all supported interfaces, including the classical e-mail in-box-based access, Web-based interfaces and the next generation of telephone user interface (TUI). Our test went beyond typical TUI evaluations in that we attempted to do it all by voice interaction, where the user could maneuver through the unified messaging system entirely "hands free" - ideally via a clean "natural-language" flow, where the system would read out e-mails accurately and in the appropriate language.

In general, the Outlook Inbox provides the highest level of functionality for unified messaging across the products tested. Additionally, the Web Outlook interface, which is not supported by all the vendors, enables quick access from anywhere, anytime. However, this

See Unified messaging, page 62







#### REPELS INTRUDERS, EMBRACES SIP PROTOCOL

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a real-time Linux operating system that is secure and not vulnerable to attack. And,

since encryption is a standard feature, it is impossible for anyone to intercept sensitive communications. Best of all, the Zultys MX250 does all this straight out of the box. To learn more about ZULTYS adding secure VoIP, access www.zultys.com/nw.

#### TECHNOLOGY INSIDER VOICE OVER IP

#### Unified messaging

continued from page 60

Web-enabled view provides much less direct access to the messaging environment.

#### Avaya MMS and UCC

Avaya's Modular Messaging System (MMS) includes all the features we sought except voice recognition, which comes from the Unified Communications Center (UCC).

Avaya provides what we consider the best Web interface, similar in many respects to Microsoft's Outlook Web Access. It is clean and easy to use, and is a viable alternative to processing voice mail and e-mail via the Outlook in-box. A small but noteworthy shortcoming is that there is no direct interaction with telephone dialing. You can't directly place a return phone call to, say, a voice mail source from the Outlook interface; you must go to an associated phone and dial a code to place a return call. We found that Cisco and Siemens were similarly limited.

Avaya's voice recognition — based on Nuance 8.5, a third-party speech-recognition software engine from Nuance Communications — is superb in terms of the natural-language flow of the interface. The system is built around some 40 fixed phrases. It is not readily extensible or user trainable, but we found it adequate for general-purpose, speaker-independent access to the full range of voice mail and e-mail functions. A nice touch is that the user can say "help" at any point and get useful and practical guidance on how to proceed.

Avaya's TTS — based on Speechify 2.1.3, a third-party TTS software engine from Scansoft — also did the best job delivering TTS, and achieved perfect scores in four out of seven test messages. A perfect score means every word in the message was correctly identified and spoken. And the correct foreign language was applied automatically in all cases, based on an analysis of the text in the body of the e-mail message. Avaya's standard TTS package includes 11 foreign languages, nine of which can be active at a time.

In the Avaya configuration, voice mail messages were

stored on the Exchange server. Voice mail could alternately have been stored on an Avaya Linux-based voice mail server, which can be deployed redundantly It's also possible to have the Avaya server back up the Exchange server, so voice mails are still accepted and saved if the Exchange server is unavailable.

Configuration-wise, Avaya's package works with many third-party PBXs, including those from Cisco, Mitel, Siemens and NEC. Additionally, Avaya says its unified messaging system will connect with Nortel, Cisco and Siemens PBXs via Q.Sig over a T-1 by this summer. Avaya's MMS and UCC connect separately to the underlying PBX, but many connectivity options are supported, ranging from analog trunks to T-1s with PRI signaling to the more advanced Q.Sig interface.

There is good flexibility in terms of voice mail vocoding settings, including G.711 and Microsoft's GSM 6.10. Scalability is adequate. Up to 69 concurrent unified messaging sessions, supporting several hundred or thousand users, are supported per Avaya server, and the system can expand to up to 10 servers. Avaya does not offer an integrated fax server feature with its unified messaging package.

#### **Siemens Xpressions**

Siemens can store voice mail on its HiPath Xpressions server or directly on the user's Exchange e-mail server. With the Siemens software running on Windows 2003 servers (recommended; Windows 2000 also supported), redundancy can be achieved via Microsoft's server clustering.

Like Avava. Siemens offers a nice Web interface for access to all unified messages. However, Avaya's was a tad easier to maneuver. Siemens' Outlook interface offered a little more flexibility than the others in some respects. For example, Siemens lets the user deposit voice mails into either of two Outlook folders, and then retain full access, including via voice recognition, to messages in either folder. With the other packages, full access was generally supported to voice mails in just one folder.

However, as with Avaya, the user cannot launch phone calls directly from the Outlook interface. Siemens says this can be accomplished via a separate computer telephony integration application it offers, called SimplyPhone.

Siemens' voice-recognition component we tested was still in late beta. It is scheduled to be added to a maintenance release of Siemens' unified messaging package this summer. The third-party speech-recognition software engine, SpeechWorks Version 3 from SpeechWorks International, requires its own server. We thought the voice recognition was particularly well done. An extensive vocabulary of terms is supported and, with assistance from Siemens technical support, the vocabulary can be extended.

While Siemens also gets its TTS capabilities from Speechify, it only uses Version 3.02. The shortcoming with this earlier version is that only German and English are supported, one at a time, set system-wide. The unified messaging package cannot automatically detect and apply different languages based on the text body of e-mails. Siemens says language support will be expanded in the next release.

The HiPath Xpressions package runs over 14 other vendors' PBXs, including many European companies (Ericsson, Alcatel, Philips and Ascom). Connectivity is ISDN PRI in almost all cases. Scalability of Siemens' package is configuration dependent. With sufficient Windows server resources, up to 255 concurrent ports are supported. However, there can be only a single voice mail message store.

A fax server is integral with the Siemens package; it is separately license-enabled and adds \$40 per seat to the total package price.

#### etResults UNIFIED MESSAGING **Modular Messaging** System 1.1 and Unified Product Communications Center 2.0 HiPath **Unity Enterprise 4.0 and Personal Assistant** CallPilot 3.0 **Xpressions 4.0** Vendor Avaya Siemens Cisco Nortel

Communications \$150 to \$200 per user. **\$299** per user. \$250 per user.\*\* Very good Web interface Best redundancy and Quick and easy phone callto unified voice and e-mail; survivability options; fast back from Outlook; user excellent administrator and easy voice mail can train voice recognition access to the UM playout; broadest and tailor voice recognition environment; flexible, usersupport for third-party commands; integrated fax settable routing of voice PBXs; most configurable server; can stream voice mail into Outlook folders; for voice mail encoding from server for faster user-settable shortcuts in and bandwidth utiplayout; voice mail remains TUI; expandable voicelization; secure voice totally independent of recognition vocabulary; mail support. Exchange server. optional integrated fax

Cons Limited and fixed voicerecognition vocabulary; no speed-up playout of voice mail via Outlook player; no fax server.

party PBXs.

language support limited to English and German; no "help" on voice mail Outlook player; no speedup playout of voice mail via viaTUI only).

No Web interface to Does not work with any unified voice and e-mail; third-party PBXs; poorTTS TTS and voice-recognition No Web interface to no access to e-mail via voice -recognition; responding via voice mail to off-system desti-Outlook player (supported 'nations is complex.

readout quality; robotic sounding, with notably poorer accuracy and quality; voice mail requires separate storage server from Exchange; requires Nortel's player to decode voice mails.

\*Per user based on 100 users. \* Hardware and software

Price\* \$260 per user.

Pros | Best TTS performance;

TTS readout of e-mail

attachments; best voice-

recognition user interface.

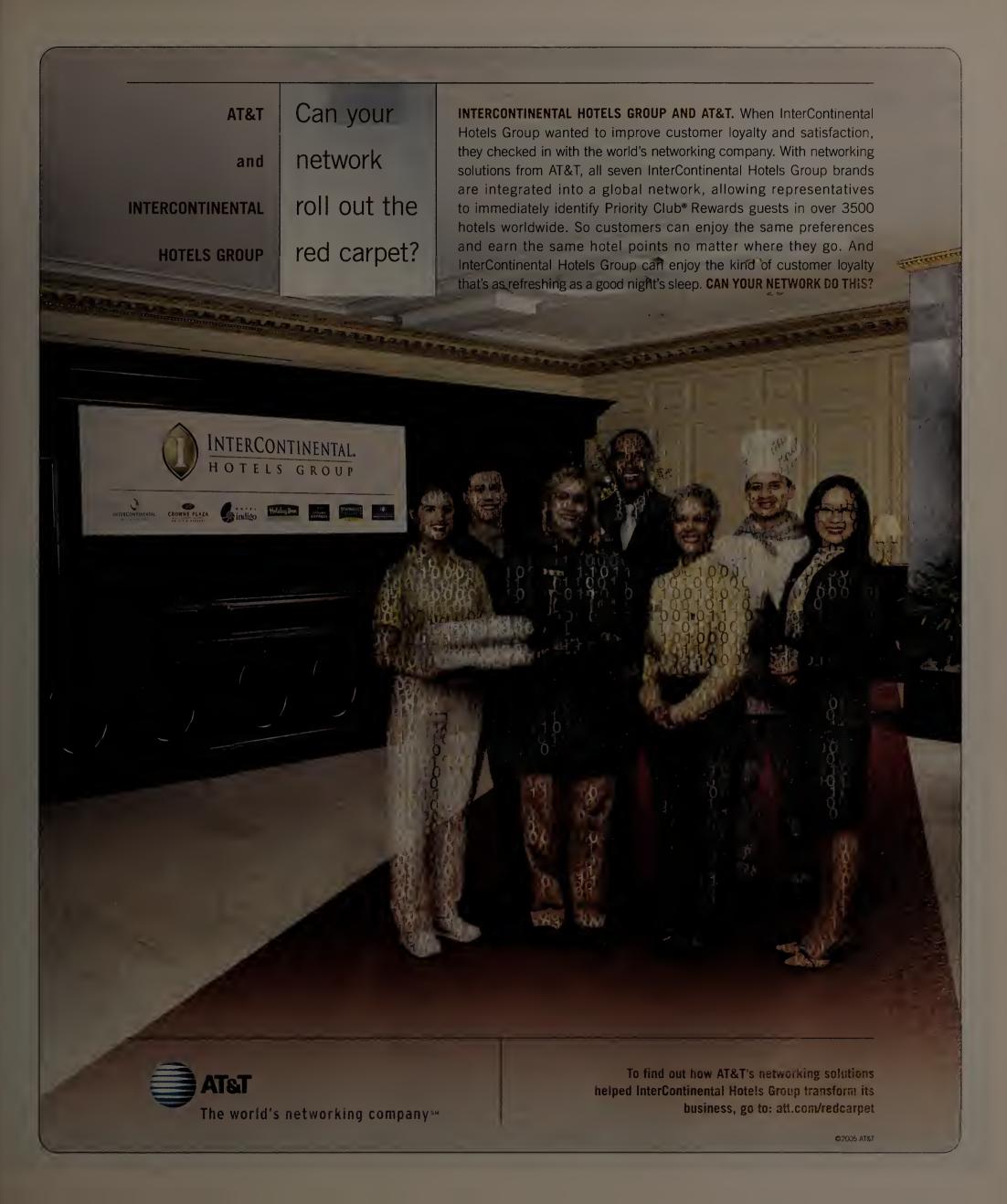
multi-language support;

unified voice and e-mail;

broad support for third-

best Web interface to

| The Breakdown                             | Avaya Modular Messaging and<br>Unified Communication Center | Siemens HiPath Xpressions  | Cisco Unity Enterprise<br>and Personal Assistant | Nortel GallPilot |
|---|---|----------------------------|--|------------------|
| User interface 40%                        | 4.5   | 4                          | 3.5  | 4                |
| Configuration and architecture <b>30%</b> | 4.5   | 4                          | 4.5  | 2.5              |
| Features 20%                              | 4   | 4                          | 3.5  | 4.5              |
| Installation and integration 10%          | NETWORKWORLD  | 4                          | 4  | 4                |
| Total score                               | 4.35 CLEAR CHOICE O   | 4                          | 3.85   | 3.65             |
| Scering Key: 5: Exceptional; 4:           | : Very good; <b>3: Average; 2:</b> Below avera              | ge; 1: Consistently subpar |  |                  |



### TECHNOLOGY INSIDER VOICE OVER IP

#### Unified messaging

continued from page 62

#### **Cisco Unity and Personal Assistant**

Cisco's Unity Enterprise unified messaging package

gets its strength from its voice recognition and high-availability features delivered as separate components.

Voice recognition is delivered via Cisco's Personal Assistant software driven also by Scansoft's Nuance engine, which requires its own server. The

Personal Assistant voice-recognition functions were well integrated — but support only voice mail access. Cisco does not support voice-recognition access to email, and cannot deliver the same hands-free maneuvering through e-mail and selective playout via TTS that competitors can. The Unity package also includes Scansoft's RealSpeak TTS software engine, which performed nearly as well as Avaya's TTS, but did not achieve any perfect scores in our test e-mail messages.

Cisco does not offer a Web interface to unified voice mail and e-mail.

Despite these competitive shortcomings, Cisco deserves recognition for a couple of nice interface touches. One is the Outlook embedded player: Only Cisco offered single-button playback of voice mail attachments directly from

Outlook Shortcuts

De Dowld Bickford

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A flary of apodd moments

Outlook Today

Outlook Eddford

Devid Bickford

Outlook Eddford

Outlook Today

Outlook Eddford

FW: Modular Messaging Voice Message

Mon 4(25/2005 11:03 Mm

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Indicate Messaging Voice Message

Modular Messaging Voice Message

Modular Messaging

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A main thrust of this test was to assess how well vendors have unified e-mail and voice mail inside the Outlook Inbox interface. While the particular unified view featured in this screenshot is Avaya's implementation, it is fairly representative of the Outlook integration we saw across products tested.

the Outlook interface. The others required a couple of steps to identify, select, open and playback a selected voice mail message. Also, Cisco did some nice engineering so that you can accelerate the playback of a lengthy voice mail while

the content remains perfectly understandable. Nortel also offers a "speed-up option" from the Outlook player, but the playback quality isn't nearly as good as Cisco's. (Note that this is not fast-forward, which skims over content, and which all of the vendors that we tested support. When you fast forward, you typically don't hear anything as you move through the message, when you "speed-up" you hear the message — only faster.) Also, all of the vendors support some manner of "speed-up" via the audio, or TUI, access to voice mail.

Cisco gets high marks for configuration and architecture, thanks in large part to its high-availability and survivability options. One, called Unity Message Repository, provides voice mail backup to the Exchange message store. Another is a disaster-recovery software utility called DIRT, that comes free with Unity.

Adding to its configuration appeal is that Cisco's Unity package runs with 17 other vendors' PBXs. The linkages are quite diverse, and include a specialized Cisco gateway that converts Session Initiation Protocol call control on the Cisco side to and from the protocol of the other PBX.

Cisco's scalability is achieved via clustering of multiple servers. Generally, the perserver concurrent-port capacity is based on the power of the servers you run it on. Cisco says that up to 7,500 users (seats) can be serviced by

See Unified messaging, page 66





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#### Unified messaging

continued from page 64

a single Unity server. Cisco offers the broadest range of settings with regards to voice vocoders, in terms of storage space and bandwidth consumption.

Cisco also gets high marks for its secure voice mail support. If a voice mail is marked secure in Cisco's Unity system, it only can be played from a system phone, and not via the Outlook player. Also, secure voice mail can't be copied or forwarded.

Cisco also offers an add-on fax server but at \$25,000, it is too expensive for all but the largest, fax-intensive companies.

#### **Nortel CallPilot**

Nortel's CallPilot unified messaging package is useful and rich, but it only works with Nortel phone systems, which is a major disadvantage. That, and the fact that only Nortel employs a proprietary voice mail-encoding scheme — so voice mail has to be played out via Nortel's player application, are two reasons we rated the CallPilot package below average in the configuration and architecture category.

Despite those limitations, we generally laud the Nortel package. For example, only Nortel lets users directly place phone calls from the unified Outlook interface. The user can select a recent voice mail, hit the one-touch recall, and the phone system will automatically place a call to the voice mail source, connecting to whatever phone device the user has associated with his laptop.

Nortel is also unique in keeping voice mail totally separate from the Exchange e-mail server. Voice mail is stored on a Nortel CallPilot server: "Unification" occurs at each user's in-box by the Nortel plug-ins that run within that user's Outlook client. In most cases, e-mail and voice mail are kept in separate in-box folders.

This is pro and a con. Some believe that keeping voice mail completely separate from the Exchange server is a good idea. You can do that with all the competitors, too. But merging everything on the same Exchange server store, whether it's a good idea or not, is simply not an option Nortel supports.

The multi-language capabilities of Nortel's TTS are as broad and dynamic as Avaya's. However, the quality is notably inferior. Nortel's TTS, based on a more-dated software engine called L&H (for Lernout & Hauspie) TTS 3000 Version 6 provides a choppy robotic TTS readout.

Nortel's voice recognition, based on L&H ASR 1500 Version 3, exhibited comparatively poorer performance, too, as we had to repeat our phrases occasionally. However, to its credit, users can train the voice recognition to respond better to their voice and commands.

Because all voice mail resides on Nortel's server, several high-availability and disaster-recovery schemes are supported. Users can schedule periodic backups to a secondary voice mail server. This might be considered a "warm" backup; the voice mail database is not mirrored.

Nortel says that up to 8,000 concurrent users can be supported by a single, high-end CallPilot server.

The differentiating factor in this test was how well the user interface and its underpinnings gave end users quick and easy access to e-mail and voice mail. But the new horizon for unified messaging packages will be further advancements in voice recognition and how well vendors can integrate that capability into their existing platforms. We'd expect TTS accuracy to improve, as well as improvements in multi-language support. As with most new technologies, we also would expect voice recognition to become more affordable.

Unified messaging can unquestionably deliver increased productivity. Employees who travel can get access to their email and voice mail by simply calling in on their cell phones or Palm Pilots and get detailed control over the messages they collect. Corporations need to carefully examine vendors' offerings, and understand the intricate dependencies of all the pieces involved, in order to maximize the investment.

Ed Mier is president, Tarpley is senior lab tester and Dave Mier is manager of lab testing at Miercom, a network-product test center in East Windsor, N.J. They can be reached at ed@mier.com, rtarpley@miercom.com or dmier@miercom. com, respectively.



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# SECTOR POTTLIGHT MANUFACTURING

How emerging technologies are transforming key vertical industries.

# Wireless enables assembly lines

802.11 LANs, RFID and sensors let factories peer into plant processes.

BY PHIL HOCHMUTH



anufacturers large and small are starting to cut the cords in their respective factories and plants. The installation of wireless sensors, RFID and 802.11-based wireless is helping these firms gain better insight into production processes,

inventory and product movement.

Wireless sensors facilitate an architecture where machines, and even inanimate parts and products, can be connected and monitored. This lets manufacturers track the health of factory equipment, the movement of products along an assembly line and the delivery of inventory. Other companies are putting a combination of 802.11 and RFID technology to use, allowing for similar end-to-end product life-cycle tracking.

"Plants are moving away from being a single-purpose facility that produces the same thing all day long for distribution all over the world," says Robert Parker, an analyst with IDC.

The other push toward the use of wireless sensors in factory networks is to give companies the ability to remotely monitor and control what's going on in far-flung plants.

"Manufacturers are looking to get a compressive view of how all their operations are interconnected," Parker says. "If you have a more flexible plant, producing a lot of products spread out over a wide area, you may have to have expertise centralized into a few locations for supporting plant technologies. The challenge is how to remotely manage these things."

General Motors is deploying several wireless technologies to meet this challenge. GM is moving toward outfitting its plants with everything from sensor network technology, including RFID tags on its inventory, to mesh networks. The combination of these technologies will help GM track everything from the parts that go into GM vehicles to the robotic assembly device and other heavy equipment used to put the cars and trucks together.

"The issues that define e-manufacturing are: how realtime data is obtained and what you as a company do with this real-time data," says Pulak Bandyopadhyay, group manager for plant floor systems and control group in GM's Manufacturing Systems Research.

GM is starting to deploy sensor technology in its plants to measure the health of its manufacturing equipment. Devices can be deployed with stamp presses, conveyer belts and other types of machinery that measure vibration, heat and other factors that can be detected to predict when a machine might fail or require service. Having the ability to detect when a piece of machinery in a plant in Mexico might go down from a network operations center in Detroit will help GM save on maintenance costs.

GM also is looking into linking such plant floor gear with mesh-based network equipment. A mesh will let network

transceiver equipment act as individual wireless routers, connecting any device to any device on the most available path. This would allow telemetry data to hop from node to node on the network, instead of all data tying back to a few wireless access points. The result would be a plant where equipment can be positioned anywhere and stay online without wires.

Although he does not like to discuss exact dollar figures or product brands, Bandyopadhyay estimates that wireless technologies GM is rolling out can help save 10% to 20% on production costs. This is because of the improved efficiency of workers in plants and other facilities outfitted with various wireless gear, such as workers on plant floors with Wi-Fi PDAs, as well as wireless-based telemetry equipment for monitoring machinery. When coupled with systems on the back end that help analyze and deliver business information based on wireless data collected, another 10% to 20% increase in efficiency and productivity could be possible.

Another area that wireless technologies is being rolled out at GM is in inventory tracking.

What GM is moving towards is this, Bandyopadhyay says: "having the ability to track the deliver of components of [a car or truck] to the factory, and then to track the assembled cars from the plants all the way to the dealership." This will give GM real-time visibility into its entire supply chain, as opposed to waiting for month-end reports on the movement of parts inventory and vehicle inventories and production.

One impediment to wireless deployment in manufacturing environments is the reliance on many proprietary technologies. Standards, such as 802.15.4, or Zigbee, are emerging as ways to tie together independent wireless nodes into a mesh, where any device can transmit and receive data from any other device. However, factories rely on a myriad of wireless technologies, ranging from 900MHz to 2.5 and 5GHz to control equipment and devices.

"We could implement wireless more broadly right now in our facilities, but [we] would end up with over 30 different networks that are incompatible," Bandyopadhyay says. GM is working with other manufacturers to promote the use of 802.11 standards in wireless-enabled industrial equipment.

#### AT A GLANCE:

#### MANUFACTURING

- The worldwide market for industrial-grade network gear is expected to grow from \$124.4 million in 2004 to \$939.8 million in 2009, according to ARC Advisory Group.
- A survey of 300 manufacturing companies by Datamonitor showed that 60% of manufacturers are already working on RFID projects, while 90% of manufacturers said their next RFID project will be based on systems and data integration.
- U.S. manufacturers spent around \$77.1 billion on IT last year, according to IDC — a 5% uptick in spending from the year before.

Smaller manufacturers also are getting into wireless sensing and inventory identification. Lifetime Products, which makes outdoor furniture and home sports equipment, uses a mix of standard 802.11 and RFID to get a better look into how products move inside factories and among different buildings.

In its 27 facilities, located on a single campus in Clearfield, Utah, Lifetime has deployed a mix of wireless technologies that let the company track its inventory of components as they move through various manufacturing products, and then follow the finished items as they are stored and shipped, according to Lifetime's ClO, John Bowden

On the manufacturing side, wireless cards are deployed with primary logic controller (PLC) equipment in the factories. PLCs control the actions of devices such as laser cutters, for creating plastic seats and basketball backboards. Manufacturers can feed real-time data back to Lifetime's data center, letting analysts know at any given time exactly how many products are being produced and at what rate. In the past, this data had to be extracted from machines on the plant floors via serial devices or floppy disks. The data might have been available to view on a printed-out spreadsheet after a month or so, Bowden says.

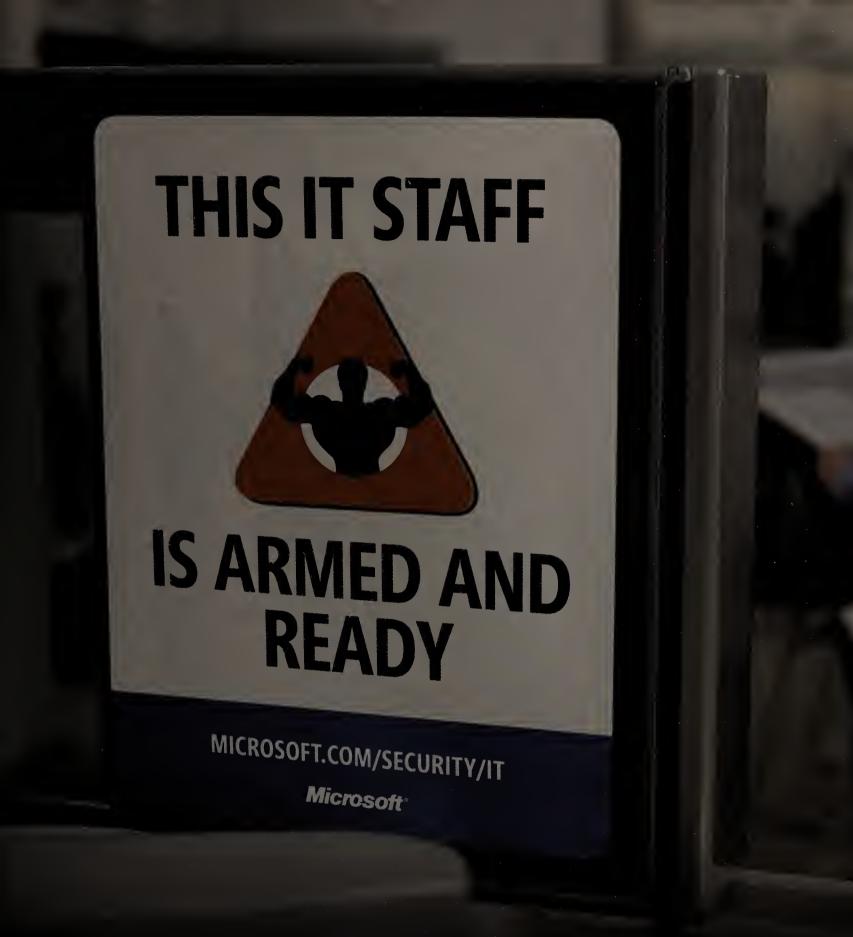
On the inventory side, HP ProCurve wireless LANs and RFID are being combined to track products after they are finished.

"What you have are forklifts that are roving up and down inventory isles," Bowden says. "They have tablet PCs or a wireless laptops and they're using a Wi-Fi signal to communicate. The concept is that the RFID tag is read and its input directly into our ERP system via the wireless [access points]."

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# Wi-Fi security: Leverage what you know

**BY JOANIE WEXLER** 

How do you know that you've covered all the bases when it comes to wireless LAN security?

Lisa Phifer, vice president at network consultancy Core Competence, says it's easy to get focused on selected technologies and lose sight of the big picture.

"Certainly, 802.11 poses new challenges that require unique solutions such as link-layer encryption and rogue access point monitoring," Phifer says. "But many network security practices also apply to wireless." She advises to leverage what you know about wired best practices for your wireless network, too. For example:

- Wireless access points and switches must be hardened against attack, just as we harden WAN-facing devices such as access routers and perimeter firewalls. Subjecting access points and switches to wired network and system vulnerability assessment scans can help you find open ports, unpatched software and default accounts.
- Wireless stations of all types must be protected. Most companies have policy and procedures to secure Internet-connected laptops. These measures should be applied to wireless stations, not only at hot spots and homes, but even on-campus. In a WLAN, don't assume that every other station is trusted. Desktop firewalls, integrity checkers, network-admission controls and centrally managed security policies can be applied to wireless stations.

Configuration details might differ — for example, you might block file sharing over wireless in just some cases. Some platforms might prove challenging. But it makes good sense to leverage what you have when moving from wired and wireless networks.

• Wireless intrusion detection and prevention systems (IDS/IPS) require understanding of 802.11 (and often 802.1X) protocols, attack signatures and expected/

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unexpected behavior, using wireless sensors to monitor the air. If you have a wired network IDS/IPS, use it to watch for attacks that make their way from wireless onto your wired network. Re-use current network management systems and log servers to monitor events on access points, switches and your wireless IDS/IPS. Implement automated responses involving device reconfiguration through your network manager so that you'll have fewer points of configuration control and audit.

When deploying a new technology, it's essential to understand

risks and countermeasures.

Wexler is an independent networking technology editor in Silicon Valley. She can be reached at joanie@jwexler.com.



#### E-MAIL NEWSLETTER SHOWGASE: THE ISP REPORT

# Verio announces Web hosting for IPv6

#### BY CAROLYN DUFFY MARSAN

Verio, a division of NTT Communications, is offering a Web hosting platform and managed Web hosting services that support IPv6, the next generation of the Internet's main communications protocol.

Verio is among the first top-tier ISPs to offer a Web-enabled production application that supports IPv6, experts say.

"This is very significant because it will provide a production Webenabled application to users from a [service provider], from a production IPv6 network, as opposed to a network pilot ... or academic network," says Jim Bound, CTO of the IPv6 Forum and Chair of the North American IPv6 Task Force.

Developed by the IETF, IPv6 is expected to ease administration, tighten security and provide an enhanced addressing scheme when compared with IPv4, the Internet's current protocol. IPv6, which uses a 128-bit addressing scheme, supports an almost limitless number of uniquely identified systems on the Internet, while IPv4 supports only a few billion systems because it uses a 32-bit addressing scheme.

Although IPv6 was finalized a decade ago, the technology is just beginning to attract the attention of enterprise customers in the U.S. The U.S. Defense Department is one of the first and largest organizations to commit to IPv6 migration. Other early adopters include Defense contractors and high-tech equipment vendors such as Cray and Juniper.

Bounds says Verio's announcement: "ratifies that IPv6 is ready for production use, even though we still have additional technology and tools to implement for IPv6. We do not have to have all the functions we need for IPv6 to begin production deployment."

Verio's IPv6-enabled Virtual Private Server and Managed Private Server offerings let users set up Web sites with IPv6 addresses. Verio offers IPv6 access services including native, tunneling and dual-stack gateway services between IPv4 and IPv6 traffic.

"This is our first major applica-

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tion that we've migrated to IPv6," says Cody Christman, director of product engineering for Verio. "It's a very significant application for us to port to IPv6."

Verio will charge \$140 per month for the base level Web hosting service, which will be supported by a NTT data center in Tokyo. Verio says it will support the application from a U.S.-based data center in 2006.

In the meantime, latency will not be an issue for U.S. customers, Christman says. "Performance is pretty quick," he adds.

Verio has been offering IPv6enabled Web hosting services since March. Initial customers are all companies based in Asia, where IPv6 is more popular than it is in the U.S.

The company points out that it runs the new IPv6-enabled Web

hosting service over its main backbone network.

"Verio doesn't view IPv6 as a separate network or an R&D network," Christman says. "Our network is IPv6. Our backbone is IPv6. This is not a parallel offering."

The carrier was the first ISP to offer IPv6 access services in the U.S. Its customers include Juniper and UltraDNS.

Verio plans to offer additional IPv6 services this year including an application called M-2-MX that automatically encrypts IPv6 traffic and a managed router service that takes advantage of the built-in security available with IPv6. Verio also plans to offer off-net tunneling for customers to get to Verio's IPv6 backbone from other ISP networks. Verio currently offers this capability but needs to turn it into a commercial product.





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# GEMENT STRATEGIES

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# HR and IT seek common ground

Thought Leadership Summit brings together leaders to share strategies.

BY NEAL WEINBERG

uman relations types and IT pros wouldn't seem to have much in common. It's your extroverted, people person who wants to make sure everybody at the company is happy vs. your introverted engineer who wants to make sure every node in the network is up.

Stereotypes aside, HR and IT do have quite a bit in common. Both are horizontal organizations that touch every part of a company and therefore have a unique view. Both are looking to use that knowledge to help businesses be more successful.

At a recent executive roundtable, leaders from both departments looked for ways they could collaborate to raise their own profiles within their organizations as well as to help make their companies more competitive. The Thought Leadership Summit on Digital Strategies is a series of executive roundtables co-founded by the Center for Digital Strategies at Dartmouth College's Tuck School of Business in Hanover, N.H., and by Cisco. Moderated by Network World President and Editorial Director John Gallant, this session focused on Gaining Competitive Advantage through Human Resource Management.

"IT and HR are really kindred spirits," said Bob Carniaux, senior vice president of HR at Hasbro in Pawtucket, R.l. "We're each other's customers, as well as collaborators within the organization. We find ourselves both fighting for a seat at the table in terms of corporate priorities, both struggling to figure out what it means to manage our respective functions on a global basis."

Hollie Castro, vice president of human resource excellence at Cisco, added that the HR/IT relationship at her company is strong but could be even stronger. "Where I'd like to see it improve is our ability to drive business strategy in conjunction with finance. We view it as the triumvirate, the three legs of the stool. We're the three functions in our corporation that have the ability to see all the way across."

#### Share and share alike

Some companies have taken collaboration to another level - actually sharing employees." l have an HR manager who is really on my staff," said Jerry Hale, CIO for Eastman Chemical in Kingsport, Tenn. "The HR manager goes back to the rest of HR and is an advocate for IT to help us achieve our mission and help us stay aligned with where corporate HR wants to go."

Conversely, HR's Castro added that at Cisco she has "one of [the IT department's] best and brightest that reports on my staff now, and that's been a key tenet of how we've built the teams."

#### **Outsourcing decisions**

HR and IT are faced with tough decisions when it comes to outsourcing. Both share the basic philosophy that it's OK to outsource some non-core functions but it's not a good idea to outsource functions that are core to the company.

'We've tried to either e-enable or outsource administrative-type roles," said Edna Kinner, director of talent management at Eastman Chemical. "We made a decision two years ago that doing retirement counseling, for example, was not core."

"IT and HR are really kindred spirits. We're each other's customers, as well as collaborators within the organization."

Bob Carniaux, senior vice president of HR at Hasbro

She added that decisions on what is core and what isn't change over time.

But the trend toward outsourcing is clear. Kinner pointed out that the benefits department at Eastman Chemical has gone from 25 to 13 employees in the last three years.

Hasbro has what Carniaux calls a "strange hybrid of insource and outsource."The company outsources open enrollment benefits but not benefits administration. "We struggle with the issues of high-touch vs. high-tech in

> terms of what we outsource and what we don't."

> "We've been very selective on areas we outsource," added Jody Horner, vice president of HR at Cargill. "We've tried to build our internal capabilities in most cases — we probably have a bias not to outsource."

> Sue Cook, vice president of HR for Eaton, a manufacturing company in Cleveland, summed up the argument against outsourcing: "I don't ever want

#### **Collaboration in action**

HR and IT departments at major companies have worked together to achieve successful results:

- HR and IT leaders at Sysco, a food services company, created a portal that allows managers to share best practices across divisions, and also put together a new job application tracking system that reduced the cost per hire by 75%.
- Projects at Hasbro include a global, multi-language employee survey and a global communications platform. "We can virtually zap content around the globe so that everybody gets the same message at the same time. Technology has really become not an afterthought, but part of the strategy whenever an important corporate announcement has to get out," said Bob Carniaux, senior vice president of HR at
- IBM created an internal résumé indexing project that lets managers instantly identify which of 150,000 employees have rare combinations
- Cargill developed a reverse auction system for the company's benefit providers that showed "real bottom-line improvements," CIO Rita Heise says.
- Eastman Chemical is working on ways to mine, aggregate and leverage HR-related data, such as medical cost information and workforce planning data.

an Eaton manager to call a third party to get advice on firing somebody. It's a decision you get to as a result of your values. How do you give that to somebody outside of the company?"

#### **Looking ahead**

Participants pointed out that HR and IT face the threat of becoming marginalized. "All of us ask those questions. Are we strategic? Are we perceived as strategic? But the opportunity is there for both the HR leader and the IT leader to step up and take that change-management role," Eastman CIO Hale said.

Carniaux put it this way: ``Where HR and IT will probably exert the most influence over the next three to five years is how we work together in terms of making our organization more flexible and adaptable, how fluid we can make our resources be to go to the place where the need is the greatest within the organization. The original organizational models that we all grew up with are going to have to change."

Eaton's Cook wrapped up the discussion on a confident note: "It's just a time of a lot of opportunity and you can be the boundary-less change leader in your organization if you choose to do that."

#### **Thought Leaders**

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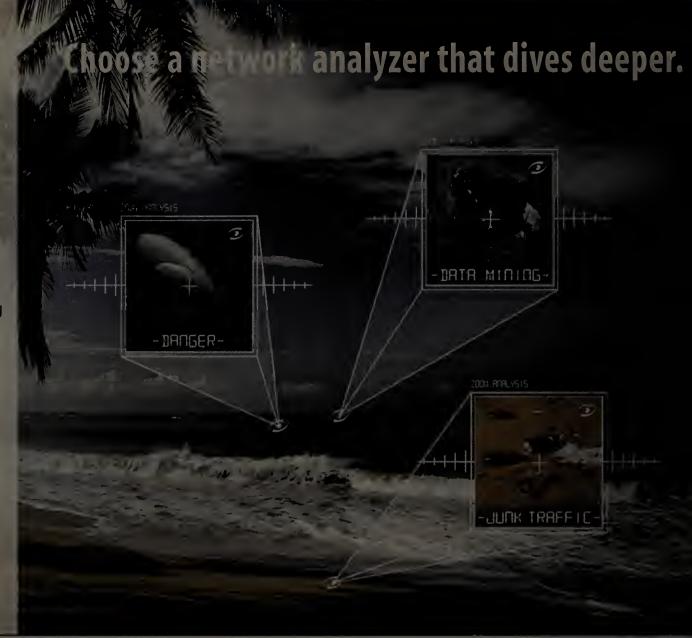
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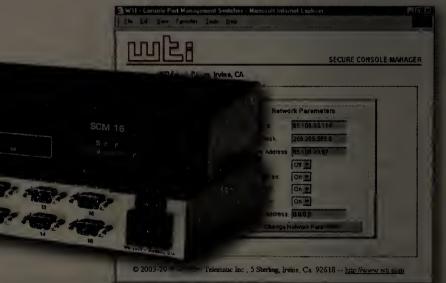
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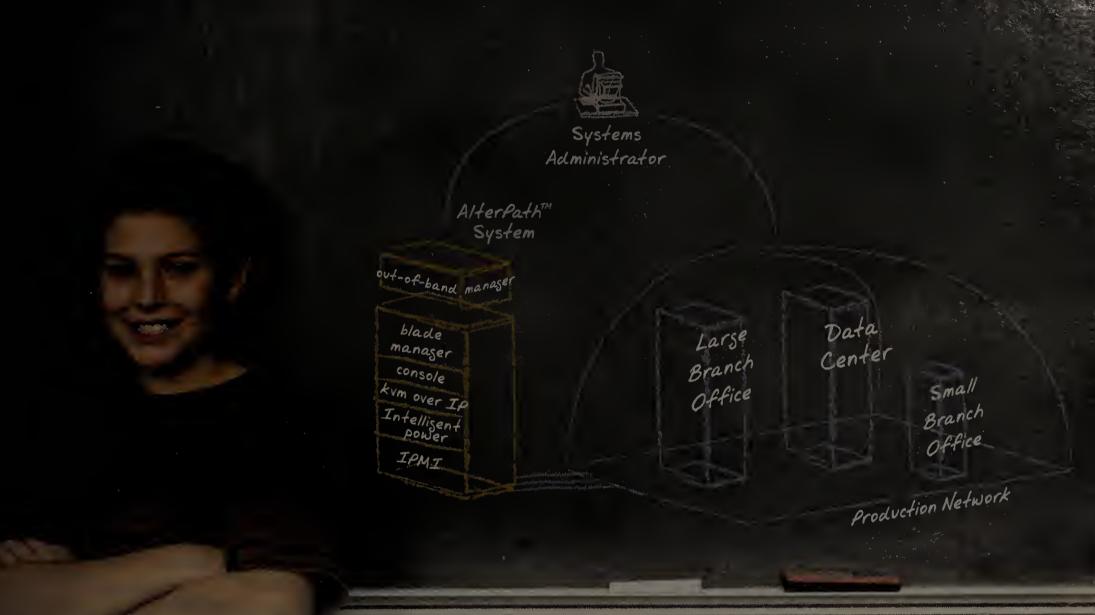


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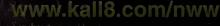
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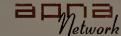














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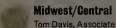


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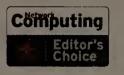
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continued from page 8

to find and fix a few encryptionrelated vulnerabilities — such as making a minor server configuration adjustment to disallow lowlevel encryption settings. But Jelly Belly has not had to make any expensive IT investments to comply with the PCI standard, Praegitzer says.

Jelly Belly is fortunate. For many online businesses, coming into compliance could be costly, depending on the conditions of their existing systems. David Glaser, director of professional services at electronic payment and risk management vendor Cyber-Source, estimates that as of April or so, the majority of U.S. merchants were only about 30% prepared for a PCI compliance audit. "There can be a lot of work to do," Glaser says.

Particularly for smaller merchants, PCI compliance might require purchasing security products, such as encryption, access control, and activity monitoring and logging devices. There are also procedural mandates — such as the need to implement formal security policies and vulnerability management programs — that will require IT resources.

Once the security systems and policies are in place, companies will need to submit to annual or

#### New rules of the game

The 12-step Payment Card Industry data security standard lays out unified requirements for securing networks, protecting cardholder data, and regularly certifying the adequacy of security systems and processes.

- 1. Install and maintain a firewall configuration to protect data.
- 2. Do not use vendor-supplied defaults for system passwords and other security parameters.
- 3. Protect stored data.
- **4.** Encrypt transmission of cardholder data and sensitive information across public networks.
- 5. Use and regularly update anti-virus software.
- 6. Develop and maintain secure systems and applications.
- 7. Restrict access to data by business need-to-know.
- 8. Assign a unique ID to each person with computer access.
- 9. Restrict physical access to cardholder data.
- 10. Track and monitor all access to network resources and cardholder data.
- 11. Regularly test security systems and processes.
- 12. Maintain a policy that addresses information security.

quarterly audits by a PCI-certified assessor to validate compliance.

What makes compliance particularly tough is that the retail industry historically hasn't emphasized security as strongly as other industries, such as financial services, says Jim Cowing, managing director at security assessment firm Digital Resources Group.

"Database encryption is probably the most difficult technical component" of the PCl standard, Cowing says. The most difficult IT administrative component is getting a comprehensive set of security policies in place and documenting those policies, he says.

Over the long term, having a unified data security standard instead of several disparate programs will make life easier for merchants and payment processors. Visa has had its own Cardholder Information Security Program since 2001, and MasterCard last year launched its Site Data Protection program.

Achieving compliance with the PCl standard covers each of the distinct programs and takes away the headache of separate certifications. "Now they're all playing from the same hymn book," Cowing says.

Meanwhile, a number of vendors have announced products and services to help companies achieve PCI compliance:

- Ingrian Networks last week announced a program designed to help merchants comply with the PCI standard's encryption rules. The program includes an assessment of a company's current methods for securing data; design recommendations; tutorials for achieving compliance; compliance validation from service provider AmbironTrustWave; and a 30-day trial of Ingrian's appliance-based DataSecure encryption platform.
- Qualys recently added PCI-specific scanning tests to its subscription-based vulnerability management platform, which is designed to detect, identify and report vulnerabilities common to flawed Web site architectures and configurations. With the QualysGuard service, merchants can scan their payment systems, follow a blueprint for correcting found vulnerabilities, and generate a compliance report as required by PCI rules.
- CyberSource launched a PCl assessment and readiness pro-

gram recently that combines a review of existing systems, policies and processes; identification of compliance gaps; and remediation efforts. CyberSource also offers compliance maintenance services for conducting quarterly vulnerability scans, assessing scan results, monitoring changes in PCI requirements and managing associated readiness efforts.

The PCI standard takes effect as the number of high-profile thefts of consumer data continues to rise. Data broker ChoicePoint and retailer BJ's Wholesale Club are among companies that have been stung by electronic theft of consumers' personal information in recent months.

"The motivation of the credit card industry is to try to enforce some discipline into merchants, or anyone who handles credit card data, to be more scrupulous about the way they handle that data," says Philippe Courtot, chairman and CEO of Qualys.

In today's environment, many retailers will welcome the incentive to shore up security, Cowing says.

"There are a lot of smart merchants out there who realize that they're holding a database that has a bunch of plain-text credit card numbers in it, and they've been meaning to fix that," he says. "IT managers have been asking for money for years to protect these things."

#### Intercarrier

continued from page 12

across carrier boundaries.

The Metro Ethernet Forum (MEF) is working on an Ethernet NNI (ENNI) that would describe how carriers can pass off services between their networks. This specification could be ready next year, MEF officials say.

Work on the ENNI started three years ago but has been idle for about a year because key people working on it were reassigned at their companies and could not commit enough time to it, says Bill Bjorkman, an enterprise marketing consultant for Verizon and co-chairman of the MEF technical committee. But AT&T, Verizon and Cisco are interested in resurrecting the work and have scheduled teleconferences over the next few months to try to wrap it up, he says.

But without ENNI, Broadwing and other carriers have to ham-

mer out individual and specific peering relationships with other carriers in order to extend VPLS-based Layer 2 Ethernet VPN service guarantees. Indeed, at the Supercomm conference, Broadwing announced a relationship with metropolitan service provider OnFiber to pair Broadwing's nationwide Layer 2/3 Converged Services offering with OnFiber's Ethernet local access network to deliver end-to-end VPLS- and MPLS-based VPNs.

After "intensive" combined testing and evaluation, OnFiber and Broadwing have interconnected their networks in 16 of OnFiber's major U.S. markets to provide an infrastructure for enterprise WAN communications, including jointly developed pricing, monitoring and support processes.

The combined Broadwing/ OnFiber service supports "hard," or guaranteed, QoS using IEEE 802.1p and q virtual LAN (VLAN) tags, and four class-of-service levels — voice and video, priority, standard and best effort.

Broadwing has plans to extend its nationwide Gigabit Ethernet VPLS services globally, but must undergo similarly intensive interconnection testing and evaluation processes with select carriers to do so. But some argue that this would be necessary even with an Ethernet/VPLS NNI.

"It's more a business issue" whether carriers are willing to set up NNIs with every other carrier with which they wanted to interoperate in order to share routing data necessary to make service connections, says Steven Cotter, senior systems engineer at router vendor Riverstone Networks.

Technically, it is not difficult to pass off VLANs between networks, he says. It could be done, for instance, with Ethernet psuedowires or SONET connections, the key being to map VLANs from one

network to another and maintain service characteristics.

And some providers that have custom arrangements to terminate VPLS services on each others' networks use the already-established user-to-network interface (UNI) defined by the MEF, says Bob Mandeville, CEO of technology testing lab lometrix and the MEF's editor of testing methods.

But the UNI lacks operations, administration and maintenance (OA&M) specifications that carriers require to connect services with other carrier networks, Verizon's Bjorkman says.

Some providers also use MPLS as the NNI to share intercarrier VPLS instances, says Ron Kaplan, an analyst at IDC. But MPLS intercarrier connectivity is a daunting challenge in and of itself, he says.

"There's only a few carriers where it's taking place because of different [MPLS] implementations," Kaplan says.

To get the ENNI work accomplished quickly, the MEF may scale back its scope. For example, rather than specify how to set up a transport network that could route traffic among three or more networks, the agreement may address only how to pass traffic between two networks.

The Ethernet/VPLS NNI issue is not unlike that which occurred with frame relay years ago. When frame relay service first came out, national carriers such as AT&T sold long-haul segments of networks and tied into local carrier networks to reach customer sites — much like Broadwing and OnFiber now do.

But the local carriers didn't win big contracts at the outset because they lacked simple ways to connect to other carrier networks, Bjorkman says. Eventually the Frame Relay Forum came up with an NNI for the technology.

# A bigger threat than viruses?

Why disk fragmentation is poised to outpace the virus as the biggest threat to productivity

#### What's really at stake

Why do we protect against viruses? Think about it. A virus causes a computer to slow down or stop, rendering the system less usable or unusable. That impacts productivity and costs you and your organization time and money. When a computer is infected by a virus, someone has to clean and repair it. That too costs time and money.

From a productivity standpoint, disk fragmentation causes the same damage as a virus. A buildup of fragmentation will cause a computer to slow down or even crash, resulting in lost productivity. And someone has to spend time fixing it.

#### Disk fragmentation: The enemy within

There is one major difference: Viruses come from outside. Disk fragmentation comes from inside. Even a newly-formatted PC with a fresh installation of Windows will be moderately fragmented. (It's true. Try it yourself and see.)

Compounding the problem is the fact that today's drives, as well as the files we store on them, are larger than ever and growing rapidly. As a result, fragmentation is a bigger threat than ever.

Viruses work by attacking the weakest link—the unprotected computer or the careless user. Likewise, disk fragmentation attacks the weakest link: The disk drive. Disk drives and disk arrays, fast as they may be, cannot transfer data anywhere near as

quickly as the CPU or memory. The disk drive is the performance bottleneck, and anything that slows down disk access slows down the entire system.

#### Protect now or wait until it breaks?

How do you handle viruses? Do you wait until a system is infected and the damage is done, and then clean and repair it? Of course not. Yet that's how many computer users and system administrators handle fragmentation. They wait until has fragmentation affected productivity, manually defragment system. But as with a virus infection, the damage has already been done. (And as soon finish manually defragmenting, fragmentation begins to re-accumulate.)

Conscientious computer users address the virus issue proactively by installing antivirus software and updating it regularly. In a corporate environment, installation and updates are usually automated so as to reduce the amount of administration time.

In order to avoid productivity losses, disk fragmentation must be handled the same wayautomatically. Like antivirus automatic software, defragmenter protects system's integrity by detecting fragmentation and eliminating it before it impacts productivity.

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continued from page 1

Carr, to refresh memories, is the author of "IT Doesn't Matter" a 2003 Harvard Business Review article that created a major uproar with its conclusion that IT was no longer a point of competitive advantage at a business level.

Microsoft's Steve Ballmer called it "hogwash." Former HP chief Carly Fiorina said Carr was "dead wrong."

One contingent contended the article was a conspiracy led by a group of rich individuals bent on keeping down IT wages. Others missed the point completely, thinking the article was critical of the technology itself.

Rather than disappearing as a forgotten flashpoint, Carr today is part of the industry, sharing his viewpoints on the speaking circuit. It's a gig, he says, that has become his career and primary source of income. He has given presentations or made public appearances around the globe nearly three times a month for the past year. And the next year probably won't be much different.

"There is no question that he is part of the industry," says Jeffrey Kaplan, managing director of consulting firm Thinkstrategies, who has written several commentaries on Carr's articles.

"He provides a useful function for this industry and continues to do so," Kaplan says. "Whether we like it or not, his views are being heard. There are a lot of corporate leaders paying to hear him talk."

Carr's latest article, "The End of Corporate Computing," appeared last month in the MIT Sloan Management Review. So far it has not become a lightning rod, with its conclusion that IT is shifting from an asset companies own to a service they purchase, that is, utility computing. Carr says it's an inevitable transition over the next 10 to 20 years.

His Web site, nicholasgcarr. com, includes an online newsletter featuring eye-catching headlines for Carr articles such as "Sons of Dracula," which likens enterprise software companies to the fictional bloodsucker, and "Moore's Law, RIP."

The site also carries a running

#### **Carr** quotes

A sampling of Nicholas Carr's views:

"Moore's Law has always been a fabrication — a popular (mis)conception of reality rather than a precise description of reality."

October 18, 2004, newsletter

"The PC in its traditional form is becoming obsolete, both at work and in the home."

March 25, 2005, newsletter

"Enterprise-software makers are like vampires. They need fresh blood to survive."

April 25, 2005, newsletter

"After pouring millions into in-house data centers, companies may find that it is time to start shutting them down."

"The End of Corporate Computing," MIT Sloan Management Review

list of links to commentary and criticism surrounding his IT analysis, a sort of blog forerunner that Carr created as the "IT Doesn't Matter" debate took on a life of its own.

"If you did a calculation of the ratio of the number of pages of the article [eight] to the number of pages written about it, it would be some astronomical number," he says with a chuckle.

Two months ago, curiosity led him to launch his own blog, Rough Type (www.roughtype.com), where he delves into the issues and milestones, which from his perspective, foreshadow the fate of corporations and their IT departments.

"I don't think it's a destination site on the Web yet," he deadpans.

With his receding hairline, curly hair, square glasses and knowing stare, he may look a bit like a grizzled lvy League academic, but Carr, who speaks in a steady and thoughtful tone, describes himself as fairly quiet by nature. He says the firestorm that brought him into the industry was totally unexpected.

"I never imagined I would find myself as a public speaker or a public figure even within a narrowly defined public," says Carr, 46, who works out of his home in Massachusetts and enjoys stealing away now and again for a little fly-fishing along New Hampshire's Nissitissit River.

Even his editors describe him as a private man.

"I know nothing about him. I don't know his age. I don't know how many kids he has," says Randall Rothenberg, editor in chief of the quarterly business magazine *Strategy+business*, where Carr is a regular contributor."I hired him because he is just a very good writer who needs very little editing."

Carr says he never planned to stay in the public eye and especially not as an IT pundit.

He studied neither business nor IT as a student, instead focusing on English literature as both an undergraduate and graduate student, first at Dartmouth College and then at Harvard. He then spent 12 years doing editing work at management firm Mercer Management Consulting, which is where he says he learned a lot about how business runs.

He joined *Harvard Business Review* in the fall of 1997, became the executive editor in

1999 and an editor-at-large in 2002.

He says one of the writers that has influenced his thinking is Harvard business professor Clayton Christiansen, who is known worldwide for his analysis of innovation and its ability to disrupt successful business strategies or create competitive advantage.

After Carr's IT baptism by fire, he signed a contract to write a book that was published last year called *Does IT Matter?* Information Technology and the Corrosion of Competitive Advantage.

"I left my full-time job as editor-at-large to write the book, and I assumed after that was done I would go back and find another job," he says.

He didn't, and he's not looking back because now he enjoys talking to IT groups and IT managers.

"Even when they disagree with me, they are interested in the idea," Carr says. "By and large they welcome the discussion. They see it as a way to engage their manager on the business side. It's a way they can talk and understand each other."

He says his latest article is about the supply side of the business of IT compared with the demand-side discussion he laid out in "IT Doesn't Matter."

"What is interesting to me is right now we are in the piecemeal phase of utility computing," Carr says. "When it will get really interesting is when you get consolidation at the supplier level. That is when it starts to challenge the business model of many of the basic component suppliers today who are used to selling directly to all individual companies."

Let the debate begin. ■

#### Data loss

continued from page 13

organization like ours should have in place we have in place," he says. The company will undergo a security and back-up audit over the next few weeks, Labatt told Ezboard users in an e-mail.

Upon discovering the attack, Ezboard immediately began data restoration processes, although the company warns that it will be impossible to restore all data to all boards. The company doesn't believe financial or other sensitive information was taken in the breach, because Ezboard stores that data separately.

In both cases, the companies that suffered from data loss also will suffer from their images being marred and might well lose customers who were directly affected.

"I'm 90% sure I'm not staying with Ezboard," Gloeckle says. "I just don't feel secure building up resources with them again.

I can't trust them."■



SECURITY

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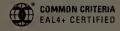


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#### Security

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first-generation of managed security service providers (MSSPs) along with the rise of carrier-class high-speed security gear from vendors such as iPolicy Networks indicate that security outsourcing can evolve into a trusted service. Customers need not purchase their own customer premises equipment (CPE), Pescatore says, particularly for perimeter defense.

Managed security services will evolve into "in-the-cloud services" in which network traffic is cleaned of spam, viruses, attack traffic and other problems before it reaches the enterprise, and perimeter firewalls and IDS reside with the carrier, said Kelly Kavanaugh, whose presentation was titled "Security in the Cloud: Take My Security Hardware, Please."

Traditional pure-play MSSPs such as Symantec, Internet Security Systems and Counterpane Internet Security, as well as the larger IT outsourcers such as EDS and IBM, are most often associated with remote monitoring customer IDS, firewalls and other gear.

But he predicted, "It becomes a utility that's shared. For enterprises, it's a way to let go of having customer premises equipment."

He said a number of in-thecloud anti-spam and anti-virus filtering services already exist, including those from Message-Labs and Symantec's Brightmail outfit. While MSSPs also might offer their own version of in-thecloud security, Kavanaugh explained that "the carriers have the best opportunity to deliver in the cloud" because they provide the essential connection closest to the customer's network.

#### A mixed reaction

The security-cloud concept generated a mixed reaction among attendees.

"I couldn't see doing that at this point," said Peter Walker. chief security officer at healthcare insurance provider Blue-Shield of California. The company relies on Counterpane for monitoring firewall and intrusion-detection and prevention gear, but he said he would be reluctant to forgo owning his own security gear.

Walker said his close relationship with Counterpane gave him confidence in outsourcing equipment monitoring and its cost-effectiveness. But he couldn't envision not owning a security CPE.

Phil Maier, vice president of information security technologies at Inovant, a division of Visa that provides IT support, said he also had reservations.

"I'm a security-paranoid, I trust nobody," said Maier, adding his



views about outsourcing had been influenced by his past experience working for a defense contractor where strict military guidelines ruled.

"But sharing your infrastructure with another organization is something that can happen and

it can work," Maier added, noting that outsourcing security was the direction is which Visa was headed since doing so would eliminate the need to hire more staff to monitor security devices.

But larger organizations say they're seriously examining the possibility of adopting security outsourcing.

"We intend to transfer assets under an outsourcing contract," said Byrne Huntley, director of the IT services center at the U.S. Department of Health and Human Services. HHS is in the middle of a bid process in which the goal is to obtain a significant portion of its network equipment and security as a service in which the supplying vendor would own and manage all the assets under a five-year contract.

"We're open to all ideas," said Huntley, who attended last week's Gartner conference. "We want an innovative approach."

The outsourcing move comes as part of a reorganization at HSS to integrate a hodgepodge of networks and applications used in eight different divisions, Huntley said.

In the move to buy the network equipment and security protection as a service, HHS still has specific products it wants to keep using. During the past few months, HHS has adopted a security-monitoring system from Securify, which uses trafficbehavior analysis to pinpoint problems such as worm outbreaks, network misconfigurations or suspicious network activity.

Any outsourcing vendor willing to supply equipment and

ing the perimeter, he noted.

"There are worm outbreaks all the time caused by someone plugging in a laptop," he pointed out. Paransky said he doubted that companies would be quick to give up their CPE.

Others noted that the move to

#### "I'm a security-paranoid, I trust nobody. But sharing your infrastructure with another organization is something that can happen and it can work.'

Phil Maier, vice president of information security technologies, Inovant

security services will also be expected to manage Securify as part of the assets, Huntley said. "We'll be working with Gartner as consultants on this outsourcing acquisition," said Huntley, adding it would be the first time the department ever negotiated this type of arrangement. "We hope to award it this summer."

With Gartner's history in influencing market direction — the consultancy strongly advocated customers adopt intrusion-prevention systems to block attacks rather than just monitor for them with IDS, with considerable success - some vendors are concerned.

Jonah Paransky, senior manager for security product management at Symantec's security operations center in Alexandria, Va., questioned Gartner's assertion that the telecom carriers are better positioned to provide security services than an MSSP such as Symantec.

Monitoring the perimeter isn't enough to get the customer's enterprise security picture, says Paransky. Monitoring the internal equipment, such as switches or host-based intrusion-prevention systems inside the corporate network, is as important as monitoroutsource security functions could be a slow one. One reason is that the so-called managed security service provider market continues to consolidate - Level 3 Communications acquired Genuity in 2003, and VeriSign snapped up Guardent in 2004 — leaving some corporate executives wary about contracting with a firm that might not be around in a few months.

Security outsourcing as Gartner outlined it last week wouldn't be a fit for companies with specialized needs, such as a requirement that equipment be touched only by those with top-secret clearances, said Chuck Jarrow, vice president of information technical services at L-3 Communications Government Services in Chantilly, Va.

Gartner analysts conceded that in-the-cloud security services aren't going to meet this type of military-grade security requirement, nor will they be the right fit for organizations which want carriers or MSSPs to use some brand of security device that's not on the menu.

"It may not be a flexible arrangement," Kavanaugh acknowledged.■

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says. "You can make them chatty. But you can [also] make them less chatty and more 'chunky." Chatty refers to how often the Web services talk to each other; chunky refers to the amount of data sent back and forth.

"You need to talk to a Web service very fast, get what you need quickly or give it what you have, and then release it quickly," Khan says."You don't want to wait for it to do its work."

As mobile devices become ever more capable, they will not only "consume" Web services, but host or "expose" them, predicts Juval Lowry, principal with iDesign, a San Jose, Calif., consultant in software architecture and an expert in Microsoft .Net."We'll be able to do things on those devices, such as peer-to-peer execution and collaboration."

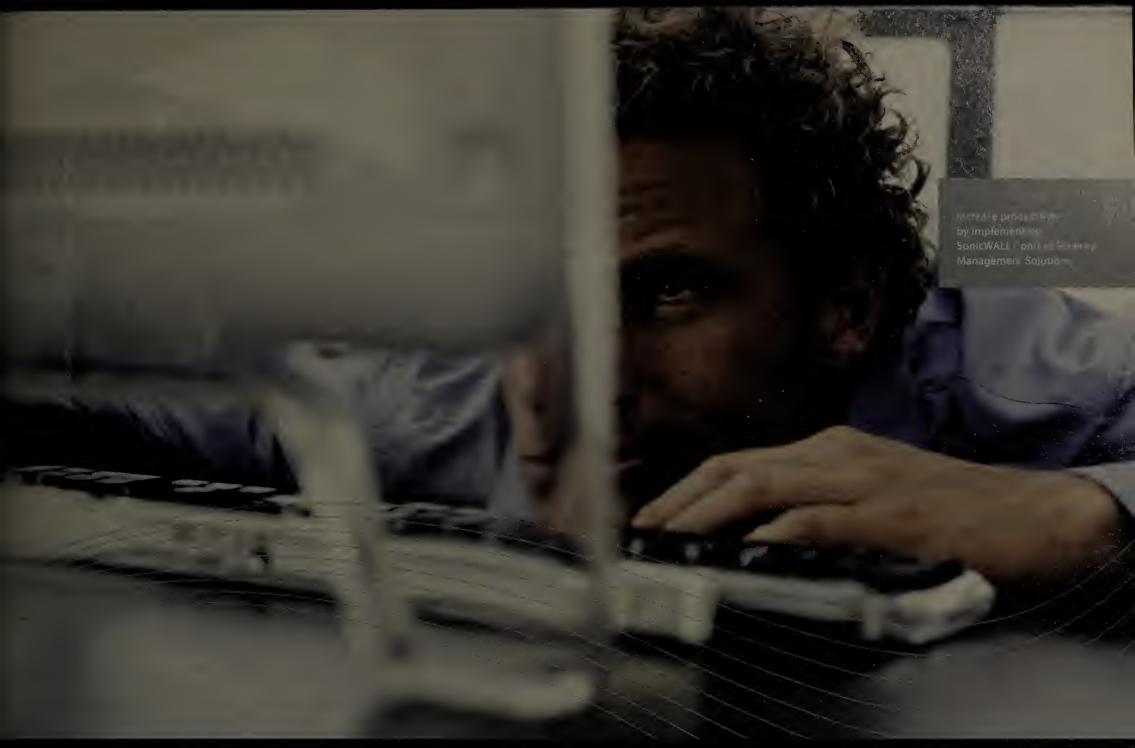
Intertech's James White cautions users to be realistic. "We're finding that Web services are not rocket science," he says. "But a lot of [software] infrastructure is needed. For example, how do you register Web services in an enterprise registry? Who has access to that? Who's the real owner of the

Finally, Web services standards still are "in pretty young and raw form," White says. "Things like standards and so on are all still naming conventions, registry

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## BACKSPIN Mark Gibbs

# Ugly to the bone

"Beauty is only skin-deep but ugly goes right to the [blank] bone."

> Billy Connolly, comedian and actor

There is a big problem in IT that I have never seen discussed. It isn't about how to get systems to work or how to keep them running. It is about how they are built. No, I'm not talking about architecture, although that is crucial to the issue. What I'm talking about is beauty.

Beauty, or its absence, is something that is instantly recognizable in things that people build. And along with beauty you usually find other attributes such as elegance, ease of use, fitness for purpose and efficiency. With ugly, you find none of these things.

In IT, beauty translates as well-architected, well-engineered systems that operate at the highest level of reliability and effectiveness. Ugly IT is defined by the opposite of those attributes: poorly architected, badly engineered collections of spare parts that function poorly.

What's interesting is that in IT, just as with people, beauty that is purely on the surface is easily identified. Meet a beautiful person and talk to them for a few minutes, and if they're shallow that will be glaringly obvious. Start trying to use that beautiful Web site and if it is only beautiful on

the surface its inner ugliness will be obvious within a few clicks.

This issue has bugged me more recently. Over the last few weeks I've been surfing the Web, researching hosting companies and various products and technologies.

Most of the Web sites I've seen are pretty good-looking but are awful to use. They have bits missing, they don't tell the complete story, the layout is illogical, they don't make it easy to find what you're looking for, and they don't give you a reason to buy or even come back.

If you can't get your customer-facing services right, what must it look like behind the scenes?

Actually, I know what some of them look like. In my alternate existence as a consultant I've seen what goes on in real companies, and I know how ugly things can be. I've seen server rooms of multimillion-dollar operations that look like they've been shaken by a large, violent explosion, and then patched back together by a demented spider spinning a web of Cat 5 cable. I've seen IT staff awash in paper and running as fast as they can to reduce the rate at which they slip backwards. I've seen fire and I've seen rain, I've seen sunny... sorry, I got carried away.

At the beginning of this column I mentioned some of the attributes I would suggest as foundations of IT beauty: elegance, ease of use, fitness for purpose and efficiency. I would argue that elegance is one of most important if not the key component. An elegant IT architecture is comprehensive, doesn't use more resources than are needed, is robust, and is based on and meets business goals.

But the choices we make to realize our architectures, the services, applications and operating systems we select, are a real problem if we are trying to build beautiful systems. Operating systems in particular are a tough place to find elegance, let alone beauty.

As soon as you dig under the surface of many major software titles you find an ugly tangled pile of compromises that wind up making the systems less elegant and therefore less beautiful.

So, let's talk about your organization. Do these attributes of beauty, and particularly elegance, apply to your architecture?

You might complain that in most IT shops — and yours in particular — the architecture just grew organically; the mighty oak you struggle with today started out as just a tiny acorn way back when.

When did you last do an architectural review and look for the dead wood that must be cut out to stop the creeping rot of ugly?

Plans for trimming to backspin@gibbs.com and check out the beautiful Gearblog, www.networkworld.com/weblogs/gearblog/).

# NETBUZZ News, insights, opinions and oddities

Paul McNamara

#### More blogging off the cliff

Hey, let's all write blogs about the inner workings of our companies, warts and all. . . . Transparency is the rage, you know.

But before we get cracking, let's make sure our résumés are polished and our bank accounts can with-

stand a stretch of unemployment.

Yes, that's my snide way of saying that this corporate blogging stuff is veering off the road — and that absolutely no one should be surprised by the turn.

The latest flap popped up last week with press coverage of a "rant" by a technical recruiter at Microsoft, Gretchen Ledgard, on a company-sponsored, public blog that is read primarily by job candidates sniffing around Redmond. You can access it through www.networkworld.com, DocFinder 7547.

Ledgard, who has since apologized, clearly had an inkling beforehand that she was about to blog out of bounds.

"Yesterday, I set up an internal blog so I could post my various rants to a 'safe' audience," Ledgard explains in a follow-up to the post that touched off the tempest. "Josh told me this was lame. Anything I want to rant about related to recruiting should probably be ranted about on the external blog. I think he's right, but it's also difficult to properly judge my safety net at times."

Take this time, for example. Josh is Gretchen Ledgard's husband, who also works and blogs at Microsoft. His advice to his wife was so wrong, and the consequences so unpleasant, that you've got to wonder if it ultimately left him sleeping on the couch for a few nights. (Josh Ledgard declined my invitation to comment; his wife suggested I contact Microsoft public relations.)

Back to Gretchen Ledgard's original blog entry:

"My latest tirade revolves around hiring managers (and I'm referring to Microsoft hiring managers... but I know this problem exists in other companies) not 'getting' the talent landscape....They can't seem to get it through their heads that 1) Microsoft isn't the only place hiring, 2) Working at a big company isn't everyone's dream, and 3) Redmond is not the first place people say they want to move when

they wake up in the morning.... So I guess I've just been really tired of (pardon my bluntness) the entitled, spoiled whiners lately.... They pay me the big bucks to be an expert on hiring for the company. You do your job; I'll do mine. Plus, you don't see me getting in your business every time some Microsoft program crashes on me, do you?"

Now that's hitting 'em where it hurts.

It should go without saying — but obviously doesn't — that such bluntness is illadvised and almost certainly counterproductive in any interdepartmental business exchange. It borders on professional suicide when delivered undiluted out on the Internet. The post drew howls from within Microsoft, in addition to unwelcome press attention.

Gretchen Ledgard, who still has a job, understands that she screwed up.

"My blog entry, while true to my thoughts and balanced with my other positive spins on Microsoft issues, was extremely unpolished and unprofessional," she writes in a later post. "I have learned a big lesson. . . . For all that I advise others about how to be good corporate bloggers, I sure didn't take my own advice."

She's not the only one to make that mistake, of course, as nary a week passes these days without word of some blogger losing his or her job over the common misconception that freedom of speech automatically extends to the workplace and comes free of consequences.

There's a school of thought evident in the many supportive replies to Ledgard's post — and throughout the blogger community, in general — that letting it all hang out is the only way to write an honest blog that anyone will bother to read.

Well, pardon my bluntness, but that's a load of crap. If blogging is going to be taken seriously as a business tool — and it should be — the toolbox first needs to be wrested away from those who see the exercise foremost as an outlet for personal venting.

Companies clearly have a long way to go getting this point across.

If you have a point to get across here, feel free to rant away. The address is buzz@nww.com.

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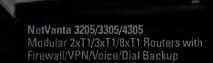
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